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Thomas Baird

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Chapter 23

2010 Pune Bombing

The **2010 Pune bombing** occurred on 13 February 2010 at approximately 19:15 Indian Standard Time, when a bomb exploded at a German bakery in the Indian city of Pune, Maharashtra. The blast killed 18 people, and injured at least 60 more, including an Italian woman, two Sudanese students and an Iranian student.

The German bakery is located near the local Jewish Chabad House and the Osho International Meditation Resort in Koregaon Park, Pune. Both the ashram and the bakery are frequented by foreigners; the bakery was filled with tourists and locals at the time of the attack.

Two self-proclaimed local Islamist groups, Lashkar-e-Taiba al-Almi and the Mujahideen Islami Muslim Front, claimed responsibility for the bombing. But, according to Indian government agencies, the attack could have been part of a project by Lashkar-e-Taiba to use the Indian Mujahideen in what is called the "Karachi Project". David Coleman Headley, a Pakistani–American terrorist who co-plotted the 2008 Mumbai attacks, has been accused of involvement in the project and bombing.

Location and time

The site of the bombing was the German Bakery, a two-decade-old popular establishment in Pune. The bakery, situated on the

ground floor of a corner building in the Koregaon Park area of Pune, was reduced to rubble, though the rest of the building was left intact. At the time of the explosion, the bakery's limited seating areas were full of students and foreign visitors from the nearby Osho Ashram. A security alert had been issued in October 2009 for a Jewish Chabad house in the vicinity of the German Bakery, but the Bakery was not deemed to be at risk at the time.

Initial media reports indicated that a Liquefied petroleum gas (LPG) cylinder used for cooking had caused the blast, but the Pune City Fire Brigade issued a statement that the cylinders at German bakery were intact. Businessman Bharat Turakhia, who suffered shrapnel injuries from the blast, saved several lives by taking the victims to a hospital and helped the police in their investigation. Security agencies confirmed shortly thereafter that the explosion was a terrorist strike.

Nine people were killed instantly. The rest of the victims succumbed to their injuries a few days later, while undergoing treatment. The Chief Minister of Maharashtra, Ashok Chavan, announced:

"Regarding the compensation payment to the dead, the families will be paid Rs.500,000 (US$11,000) per person who has died in the unfortunate incident. And whatever the medical expenditure is for the people who have been admitted to the hospitals the costs will be entirely covered by the government."

About 60 people were injured in the bombing; 46 were men and the rest were women. 12 of the injured were foreigners: five were Iranian, two were Sudanese and two were Nepalese, and one each from Italy, Taiwan, and Yemen.

Equipment

Commissioner of Police, Satyapal Singh, after receiving the preliminary report from the Forensic Science Laboratory (FSL), stated that RDX explosive had been used. Ball bearings together with nuts and bolts were used in the bomb. He added, "According to the FSL report received last night, the material used for the explosive was a combination of RDX, ammonium nitrate and petroleum hydrocarbon oil (ANFO). However, the quantity used has not been determined yet. Also the trigger mechanism is still subject to investigation." It is not known whether a remote detonator or a timer was used to set off the blast.

Initial hypotheses about the perpetrators and motives

On 14 February, the Indian Home Minister P. Chidambaram stated that responsibility for the blast had not yet been determined, but that Indian authorities were making attempts to interview David Headley, a Pakistani-American businessman, accused of involvement with terrorism who was then undergoing trial in the United States. In connection with the bomb blast, the Indian Home Secretary, G. K. Pillai also referred to Headley.

News organisations have reported that Headley had visited Pune in July 2008 and March 2009 to scout the area near the blast and described him as a suspected member of Lashkar-e-Taiba, one of the largest and most active South Asian Islamist terrorist organisations. G. K. Pillai also said that the attack

could be part of a project by Lashkar-e-Taiba to use the Indian Mujahideen in what Headley apparently called the 'Karachi project' during his interrogation by the U.S. Federal Bureau of Investigation (FBI).

The attack occurred just a few days after an agreement was reached between India and Pakistan to resume dialogue at a meeting on 25 February in New Delhi. The incident added to the government's vulnerability, with the opposition asking for suspension of the bilateral talks.

A little known group calling itself the *Laskhar-e-Taiba Al Alami* claimed it was behind the bomb attack in Pune in a phone call to the Islamabad office of the Indian daily *The Hindu*. The caller appeared to be educated, and said the group had split from the Lashkar-e-Taiba due to its affinity to Pakistan's Inter-Services Intelligence. The call appeared to originate from the Miramshah or Bannu district in North Waziristan.

Ilyas Kashmiri was believed to have masterminded the attack. He was killed in a drone strike in Pakistan on 3 June 2011.

Investigation

The Maharashtra Police had announced a probe was under way to establish the cause of the explosion, while a Central Bureau of Investigation team was sent from New Delhi to Pune to assist in the investigations. Consequently, the entire country was put on high alert, especially Mumbai and Hyderabad. After a detailed review of the internal security situation in the wake of the attack, Prime Minister Manmohan Singh directed the

Union and Maharashtra governments to take coordinated and effective action to speedily investigate the terror attack.

Investigation in the blast was carried out by the Maharashtra government's Anti Terrorist Squad, along with the National Investigation Agency in Delhi. Maharashtra ATS Chief K P Raghuvanshi is heading the blast probe. The agency has crucial closed-circuit television camera (CCTV) footage of the alleged bombers.

Investigators first focused their attention on the possibility that the attacks were carried out by a Pune jihad cell known to have existed since at least since 2006. This came out from the questioning of Mohammad Peerbhoy, an Indian Mujahideen operative held in the course of a national counter-terrorism operation that targeted the Lashkar-linked group in 2008.

Just moments before the explosion, Paras Rimal, a waiter at the German Bakery had noticed the bag (containing explosives). When Paras moved in to investigate the bag, he was called out of the bakery by an unknown motorist who paid him ₹200 (US$2.80) to fetch a glass of water. Since Paras was away from the blast he sustained mild injuries and has become an important eyewitness for the police.

Investigators also included other Indian metropolitan cities like Bangalore and Mumbai in the probe. Popular destinations where foreigners are often seen are being searched. Similarly people who checked in or out of hotels in the surrounding areas are also being tracked down. Over 40 people have been arrested during the investigation. Among them are four Kashmiris arrested in Hampi, Karnataka. Pune police arrested

two suspects from Pune's suburbs on 16 February 2010. Another two were detained in Aurangabad.

The Maharashtra Anti-Terrorism Squad (ATS) identified Yasin Bhatkal, believed to be a relative of Indian Mujahideen founder Riyaz Bhatkal, as one of the main conspirators of the blast in a preliminary report submitted to the State Government on 7 April 2010. The investigating agency, in its report, has identified four more suspects involved in the blast, including the planters of the bomb – laden bag which went off in the German Bakery. Maharashtra home minister R.R. Patil told the Legislative Council that the suspects would be arrested in a few days and more details would be disclosed at a later stage.

On 24 May 2010, Maharashtra ATS arrested Abdul Samad Bhatkal, younger brother of Yaseen Bhatkal, as he got off Air India flight 812 at Mangalore International Airport for his alleged involvement in a little-known murder case. However, Home Minister P. Chidambaram later identified him as the prime suspect in the German Bakery blast. Bhatkal had left for Dubai shortly after the blast and was returning after his visa expired.

He was arrested using a Lookout Notice that was issued by the Mumbai police. Samad was trying to slip into the country through the Bajpe Airport by taking advantage of the situation that prevailed following the 22 May 2010 crash at Mangalore of flight Air India Express Flight 812. Bhatkal was apprehended based on investigation of CCTV footage from the German Bakery.

In September 2010, the ATS arrested Mirza Himayat Baig (29) for his involvement in the attack, as well as his aide Shaikh

Lalbaba Mohammed Hussain alias Bilal (27), both believed to be members of Islamist militant terrorist organisation LeT. Baig was said to have taken bomb-making training in Colombo in 2008.

On 30 November 2011, Delhi Police special cell arrested six suspected Indian Mujahideen operatives whom they claimed to be the perpetrators of the 2010 Pune bombing, the Chinnaswamy stadium blast and the 2010 Jama Masjid attack. One Pakistani national was also reported to have been arrested. Two of the seven people were arrested in Chennai and were identified by the special cell as Mohammad Irshad Khan (age 50) and Abdul Rahman (age 19), hailing from Madhubani district of Bihar.

Another individual – Ghayur Jamil – a student at a madarsa in Darbhanga was also arrested from Madhubani on the charge of recruiting youths from near the Indo-Nepal border for terrorist activities,

Abdul Rahman being one of such recruits. This charge was disputed by Jamil's father who billed him as a good orator and an honest, religious man who had lost a bag containing his belongings – including his PAN card, residential proof and photos – a few days back.

A Pune court on 18 April 2013 awarded a death sentence to Indian Mujahideen operative Himayat Baig, who was earlier in the week convicted for his involvement in the blasts. Baig's lawyer A Rahman had said that though they respected the verdict, they would appeal against it in the Bombay High Court.

Reaction

Domestic reactions

- India
- Prime Minister Manmohan Singh who discussed the situation with Home Minister P. Chidambaram, directed speedy investigation so that "the culprits responsible for this heinous act are identified and brought to justice at the earliest,
- Bharatiya Janata Party President Nitin Gadkari described the Pune blast as an "unfortunate incident." In a statement, opposition leader Arun Jaitley said: "The BJP urges the government to reconsider both these steps: allowing persons from Pakistani-administered Kashmir to return and resuming the dialogue with Pakistan. Terror and talks cannot coexist."
- The Communist Party of India (Marxist) condemned the Pune blast and asked the Union government to provide all help to Maharashtra to bring the guilty to book.
- Kerala chief minister V S Achuthanandan said "Terrorist strikes being reported from different parts of the country are matters of grave concern," adding that the threat should be viewed seriously and stern measures must be taken to tackle the menace.
- Sharad Pawar Union Agricultural minister, said "It is not alright to arrive at a conclusion that the entire Pune city has been targeted. The place where the blast took place is an isolated area" adding "when I

was Chief Minister, Mumbai saw 11 simultaneous blasts but everything returned to normal soon."

International reactions

- Pakistan – Prime Minister Yousaf Raza Gilani condemned the blast and indicated that the Pakistani government still wants the peace talks to go ahead.
- United Kingdom – In a statement, the British High Commission condemned the Pune bombing and expressed the UK's solidarity with India. "We condemn the cowardly attack on innocent people in Pune. The UK expresses its wholehearted solidarity with India. Our sympathies and condolences are with the families of all those affected in this incident," it said.
- United States – Ambassador Timothy J. Roemer condemned the Pune bombing. "On behalf of the people of the United States, I extend heartfelt sympathy to the Government of India and the victims of this tragic terrorist blast in Pune. The US remains shoulder-to-shoulder with India in the fight against terror and will assist as needed to help bring the perpetrators of this cowardly act to justice." President Barack Obama condemned the blast that took place in Pune and expressed his condolences on the loss of life in a phone call to Prime Minister Manmohan Singh.

Chapter 24

After 34 years of Left Front Government, Trinamool Congress and Congress Alliance Come to Power in West Bengal

Left Front (West Bengal)

The **Left Front** (Bengali: বাম ফ্রন্ট; *baam front*) is an alliance of political parties in the Indian state of West Bengal. It was formed in January 1977, the founding parties being the Communist Party of India (Marxist), All India Forward Bloc, the Revolutionary Socialist Party, the Marxist Forward Bloc, the Revolutionary Communist Party of India and the Biplabi Bangla Congress. Other parties joined in later years, most notably the Communist Party of India.

The Left Front ruled the state for seven consecutive terms 1977–2011, five with Jyoti Basu as Chief Minister and two under Buddhadev Bhattacharya. The CPI(M) is the dominant force in the alliance. In the 2011 West Bengal Legislative Assembly election the Left Front failed to gain a majority of seats and left office. As of 2016 Biman Bose is the Chairman of the West Bengal Left Front Committee.

Current member parties

- Communist Party of India (Marxist)
- Communist Party of India
- All India Forward Bloc
- Revolutionary Socialist Party
- Revolutionary Communist Party of India
- Bolshevik Party of India
- Marxist Forward Bloc
- Workers Party of India
- Biplobi Bangla Congress

Background

The Left Front has its roots in various past platforms of collaboration of West Bengal left parties and anti-Indian National Congress forces. Such examples were the United Left Front, the People's United Left Front and the United Front that governed West Bengal 1967–1971. However, ahead of the March 1977 Lok Sabha election the left parties under the leadership of CPI(M) decided to form an alliance just amongst themselves, based on past negative experiences in collaboration with centrist anti-Congress forces. The Left Front was set up as the repressive climate of the Emergency was relaxed in January 1977. The six founding parties of the Left Front, i.e. the CPI(M), the All India Forward Bloc, the Revolutionary Socialist Party, the Marxist Forward Bloc, the Revolutionary Communist Party of India and the Biplabi Bangla Congress, articulated a common programme. The Left Front contested the Lok Sabha election in an electoral understanding together with the Janata Party.

The Workers Party of India applied for inclusion into the Left Front, but was denied entry.

1977 elections

Left-Janata alliance in Lok Sabha election

In the 1977 Lok Sabha election the Left Front contested 26 out of the 42 West Bengal Lok Sabha constituencies; CPI(M) fielded candidates for 20 seats, RSP 3 seats and AIFB 3 seats. CPI(M) won 17 seats, AIFB 3 seats and RSP 3 seats. The combined Left Front vote in West Bengal reached 5,049,077 votes (33.4% of the votes cast in the state).

Left victory in assembly polls

Ahead of the subsequent June 1977 West Bengal Legislative Assembly elections seat-sharing talks between the Left Front and the Janata Party broke down. The Left Front had offered the Janata Party 56% of the seats and the post as Chief Minister to JP leader Prafulla Chandra Sen, but JP insisted on 70% of the seats. The Left Front thus opted to contest the elections on its own. It issued a 36-point manifesto ahead of the polls. The Left Front manifesto has similarities with the past 32-point United Front manifesto.

The seat-sharing within the Left Front was based on the 'Promode Formula', named after the CPI(M) State Committee Secretary Promode Dasgupta. Under the Promode Formula the party with the highest share of votes in a constituency would continue to field candidates there, under its own election symbol and manifesto.

CPI(M) contested 224 seats, AIFB 36, RSP 23, MFB 3, RCPI 4 and BBC 2. There was also a Left Front-supported independent candidate in the Chakdaha seat.

The Left Front won the election, winning 231 out of the 294 seats. CPI(M) won 178 seats, AIFB 25, RSP 20, MFB 3, RCPI 3 and 1 independent. AIFB and RSP won significant chunks of seats in northern Bengal. The combined Left Front vote was 6,568,999 votes (45.8% of the votes cast in the state). The electoral result came as a surprise to the Left Front itself, as it had offered 52% of the seats in the pre-electoral seat sharing talks with the Janata Party.

First Left Front government

On 21 June 1977 the Left Front formed a government with Jyoti Basu as its Chief Minister. The first cabinet meeting of the Left Front government orders the release of political prisoners

The Socialist Party joined the Left Front after the 1977 elections. Prior to the arrival of the Left Front government, the political environment of West Bengal was chaotic, and the new cabinet struggled to establish order.

The first years of governance was shaky, as the CPI(M) struggled with the notion of managing a communist government within a capitalist framework. Minor coalition partners expressed concern over inviting multinational corporations to invest in West Bengal.

Operation Barga and panchayat polls

In the initial phase of Left Front governance, two key priorities were land reform and decentralisation of administration. On 29 September 1977 the West Bengal Land (Amendment) Bill was passed. Through Operation Barga, in which share-croppers were given inheritable rights on lands they tilled, 1.1 million acres of land was distributed amongst 1.4 million share-croppers. On 4 June 1978 three-tier panchayat local bodies were elected across the state, elections in which the Left Front won a landslide victory. Some 800,000 acres of land were distributed to 1.5 million heads of households between 1978 and 1982. The Left Front government was also credited with coping with the refugee situation created by the Bangladesh Liberation War and severe floods.

Seeing distribution of central government funds as unjust and politicized, the Left Front government began measures to pressure the central government to change its approach towards the state governments. These movements eventually resulted in the Sarkaria Commission.

1980 Lok Sabha election

Ahead of the 1980 Lok Sabha election the Left Front and the Communist Party of India entered into a seat-sharing agreement. CPI(M) contested 31 seats, RSP 4 seats, AIFB 4 seats and CPI 3 seats. CPI(M) won 28 seats, CPI 3 seats, AIFB 3 seats and RSP 4 seats. The combined Left Front-CPI vote in West Bengal reached 11,086,354 votes (52.7% of the votes cast in the state).

On 27 May 1980 the Left Front cancelled the past Code of Conduct for state government employees, which had limited the right to strike.

Second Left Front government

Three new members

In 1982 the Left Front acquired three new members, CPI joined the Left Front ahead of the 1982 West Bengal Legislative Assembly elections and the Socialist Party was split into the Democratic Socialist Party (Prabodh Chandra) and the West Bengal Socialist Party (both DSP and WBSP became Left Front member parties). Some of the older, smaller Left Front constituents were uncomfortable with the expansion of the alliance, claiming that CPI(M) was diluting it politically. There were also disagreements on distribution of ministerial portfolios after the expansion of the alliance.

1982 assembly election

CPI(M) contested 209 seats in the assembly election, CPI 12 seats, AIFB 34 seats and RSP 23 seats. 16 candidates were fielded by the remainder of Left Front partners (RCPI, WBSP, DSP, BBC, MFB) and contested as independents.

The Left Front won 238 out of 294 seats in the election. CPI(M) won 174 seats, CPI 7 seats, AIFB 28 seats, RSP 19 seats, WBSP 4 seats, DSP 2 seats, RCPI 2 seats, MFB 2 seats. The combined Left Front vote was 11,869,003 votes (52.7% of the votes cast in the state). The incumbent Food Minister, the RCPI leader Sudhindranath Kumar, lost his seat. Kumar was

proposed as a candidate for a Rajya Sabha seat on behalf of the Left Front in 1984, but that move did not go down well with RSP and AIFB.

Jyoti Basu and five cabinet minister were sworn in on 27 May 1982. Another 15 cabinet ministers and 22 Ministers of State were sworn in on 2 June 1982.

1984 Lok Sabha election

In the 1984 Lok Sabha election, CPI(M) contested 31 seats, RSP 4 seats, AIFB 4 seats and CPI 3 seats. CPI(M) won 18 seats, CPI 3 seats, AIFB 2 seats and RSP 3 seats. The Left Front vote in West Bengal reached 12,296,816 votes (47.6% of the votes cast in the state).

Calcutta Municipal Corporation polls

On 30 June 1985, the first Calcutta Municipal Corporations elections were held under the Left Front rule, an election that the alliance won.

Third Left Front government

1987 assembly election

In the 1987 West Bengal Legislative Assembly election the Left Front increased its share of seats to 251. CPI(M) had contested 213 seats, CPI 12 seats, AIFB 34 seats and RSP 23 seats. 12 candidates were fielded by smaller Left Front partners on independent tickets.

CPI(M) won 187 seats, CPI 11 seats, AIFB 26 seats, 18 seats, WBSP 4 seats, MFB 2 seats, DSP 2 seats and RCPI 1 seat. The Left Front vote stood at 13,924,806 (53%).

1989 Lok Sabha election

In the 1989 Lok Sabha election, CPI(M) contested 31 seats, RSP 4 seats, CPI 3 seats and AIFB 3 seats. In Calcutta Northwest the Left Front supported a Janata Dal candidates who failed to get elected. CPI(M) won 27 seats, CPI 3 seats, AIFB 3 seats and RSP 4 seats. The Left Front vote in West Bengal, including the votes for the JD candidate, reached 16,284,415 votes (50.6% of the votes cast in the state).

Fourth Left Front government

1991 assembly election

In the 1991 West Bengal Legislative Assembly election the Left Front won 244 seats. CPI(M) had fielded 205 candidates (excluding minor parties contesting on CPI(M) tickets), CPI 11, AIFB 34, RSP 23, MFB 2, RCPI 2, DSP 2, WBSP 4 and BBC 1. Several leaders of minor Left Front parties contested on the CPI(M) symbol, such as Kiranmoy Nanda (WBSP), Gouranga Samanta (BBC) and Prabodh Chandra Sinha (DSP). However, DSP also one candidate with its own symbol in Pingla. Two different RCPI tickets contested Hansan (RCPI (Rasik Bhatt)) and Santipur (Real Communist Party of India) respectively. MFB fielded 1 candidate on an independent ticket and 1 candidate on CPI(M) ticket.

The Left Front supported Janata Dal candidates in 8 constituencies, mainly in and around Calcutta, as well as 1 candidate of the All India Gorkha League and 1 candidate of the Communist Revolutionary League of India.

CPI(M) won 182 seats, CPI 6 seats, AIFB 29 seats, RSP 18 seats, WBSP 4, seats, DSP 2 seats, RCPI 1 seat, MFB 2 seats and DSP 1 seat (on its own symbol).

One JD candidate won. The combined vote for Left Front and allies stood at 15,090,595 (48.92% of the votes cast in the state).

1991 Lok Sabha election

In the 1991 Lok Sabha election, CPI(M) contested 30 seats, RSP 4 seats, CPI 3 seats and AIFB 3 seats. In Calcutta Northwest and Calcutta Northeast the Left Front supported a Janata Dal candidates who failed to get elected. CPI(M) won 27 seats, CPI 3 seats, AIFB 3 seats and RSP 4 seats. The Left Front vote in West Bengal, including the votes for the JD candidates, reached 14,955,151 votes (47.1% of the votes cast in the state).

In 1995 the Communist Revolutionary League of India (CRLI) of Ashim Chatterjee joined the Left Front. Chatterjee, a former Naxalite student leader, had unsuccessfully contested the 1991 assembly election as a CPI(M)-supported candidate.

Fifth Left Front government

WBSP-SP merger

Ahead of the 1996 West Bengal Legislative Assembly election, WBSP had merged into the Samajwadi Party which became a member of the Left Front.

1996 assembly election

CPI(M) fielded 217 candidates in the assembly election, CPI 12, AIFB 34, RSP 23, RCPI 2 and BBC 1 candidate on an independent ticket. DSP, WBSP and MFB candidates contested on CPI(M) tickets. In 5 seats the Left Front supported JD candidates, mainly in the Calcutta area.

The Left Front won 203 out of 294 seats, the first major electoral set-back since its foundation. CPI(M) won 157 seats (including minor parties on its tickets), CPI 6, AFB 21, RSP 18 and BBC 1. The electoral losses were primarily felt in Calcutta and the industrial areas, and nine incumbent Left Front ministers failed to get re-elected. All JD candidates finished in second place and RCPI lost its representation in the assembly. However, in terms of votes the Left Front and the five JD candidates got 18,143,795 votes (49.3%). Jyoti Basu's fifth Left Front government was sworn in, with 48 ministers representing all 13 districts of the state.

United Front era (1996–1999)

In the 1996 Lok Sabha election, CPI(M) contested 31 seats, RSP 4 seats, CPI 3 seats and AIFB 3 seats. In Calcutta

Northwest the Left Front supported a Janata Dal candidate who failed to get elected. CPI(M) won 23 seats, CPI 3 seats, AIFB 3 seats and RSP 4 seats. The Left Front vote in West Bengal, including the votes for the JD candidate, reached 18,011,700 votes (47.8% of the votes cast in the state). In the 1998 Lok Sabha election, CPI(M) contested 32 seats, RSP 4 seats, CPI 3 seats and AIFB 3 seats.

The list of candidates was announced at a press conference on 6 January 1998. The Left Front had been able to reach consensus on its candidates well before the other major parties, and subsequently the CPI(M) election campaign came off to an early start.

A mammoth United Front, the national alliance backed by the left at the time, election meeting was held in Calcutta on 31 January 1998 with Jyoti Basu as the main speaker. Basu undertook a tour of all West Bengal districts to campaign for the Left Front candidates.

The CPI(M) candidates included 18 incumbent Lok Sabha MPs, whereas the CPI and RSP fielded all of their incumbent MPs. The Left Front fielded the ex-mayor and 4-term minister Prasanta Sur to contest against Trinamool Congress leader Mamata Banerjee for the Calcutta South seat, but Sur failed to defeat Banerjee.

The Left Front also fielded Prasanta Chatterjee, the sitting mayor of Calcutta for the Calcutta Northeast seat as well as fielding sitting Howrah mayor Swadesh Chakravarty against the Congress(I) MP Priya Ranjan Dasmunsi. AIFB fielded a new candidate in Barasat, as the Barasat MP Chitta Basu had died.

All in all, CPI(M) won 24 seats, CPI 3 seats, AIFB 2 seats and RSP 4 seats. AIFB lost the Barasat seat to Trinamool Congress. The Left Front vote in West Bengal reached 17,101,211 votes (46% of the votes cast in the state).

Ahead of the 1999 Lok Sabha election, the Left Front released its list of candidates on 30 July 1999; CPI(M) contested 32 seats, RSP 4 seats, CPI 3 seats and AIFB 3 seats. The Left Front fielded nine new candidates; two sitting CPI(M) MPs were replaced (Ananda Pathak from Darjeeling and Ajoy Mukherjee from Krishnanagar). CPI(M) fielded new faces in five Calcutta constituencies. AIFB fielded a new candidate in Barasat. RSP and CPI retained all their sitting parliamentarians as candidates for re-election.

CPI(M) won 21 seats, CPI 3 seats, AIFB 2 seats and RSP 3 seats. The Left Front vote in West Bengal reached 16,494,424 votes (46.1% of the votes cast in the state).

CRLI out, WBSP reconstituted

CRLI left the Left Front in 2000 in the wake of the Saifuddin Choudhury's expulsion from CPI(M). In 2000, the WBSP was reconstituted after Amar Singh took over the Samajwadi Party and Kiranmoy Nanda (Fisheries Minister of Left Front government 1982–2011) broke away.

Panskura by-election

In 2000 a by-election was called for the Panskura Lok Sabha seat as the sitting CPI MP Geeta Mukherjee died. Mukherjee had held the seat since 1980. The by-election, as it occurred just months before the 2001 West Bengal Legislative Assembly

election, was attached crucial importance. Jyoti Basu, former Prime Minister V.P. Singh and CPI leader A.B. Bardhan campaigned for the Left Front candidate whilst Mamata Banerjee campaigned for the Trinamool Congress candidate. The defeat of the Left Front candidate (former Rajya Saha MP Gurudas Dasgupta of CPI) by the Trinamool Congress candidate was a major jolt to the alliance. On 27 October 2000 Basu, aged 86, was given permission by the CPI(M) leadership to resign as Chief Minister. Buddhadev Bhattacharya was sworn in as new Chief Minister on 6 November 2000.

Sixth Left Front government

2001 assembly election

In the 2001 West Bengal Legislative Assembly election the Left Front won 199 out of 294 seats, having received 17,912,669 votes along with its RJD and JD(S) allies (49% of the votes in the state). For the first time since 1977 CPI(M) did not hold an absolute majority of its own in the assembly.

CPI(M) had fielded 210 candidates, CPI 13, AIFB 34, RSP 23, RCPI 2, WBSP 4, DSP 2, MFB 1 and BBC 1. A 38-point Left Front election manifesto was presented in March 2001 at CPI(M) West Bengal headquarters, Muzaffar Bhavan, and was signed by Jyoti Basu (CPI(M)), Sailen Dasgupta (CPI(M)), Buddhadeb Bhattacharya (CPI(M), Anil Biswas (CPI(M)), Ashok Ghosh (AIFB), Debabrata Bandyopadhyay (RSP), Manjukumar Majumdar (CPI), Kiranmoy Nanda (SP), Prabodh Chandra Sinha (DSP), Mihir Byne (RCPI), Pratim Chatterjee (MFB) and Sunil Chaudhuri (BBC). A mass rally was held at Brigade Grounds on 25 March 2001 with participation from various Left Front

leaders and with former Prime Minister V.P. Singh as special guest. CPI(M) won 142 seats, CPI 7, AIFB 25, RSP 17, WBSP 4, DSP 2 and BBC 1.

In 2 seats (Bara Bazar and Hirapur) the Left Front had supported candidates of Rashtriya Janata Dal and in 2 seats (Chowringee and Rash Behari Avenue) the alliance had backed candidates from Janata Dal (Secular) . No RJD nor JD(S) candidates were elected. In Hirapur local CPI(M) cadres rebelled against the official RJD candidate and ran a dissident candidate of their own which finished in second place, ahead of the official Left Front-supported RJD candidate. The sixth Left Front government, with 48 ministers, was sworn in of 19 May 2001.

2004 Lok Sabha election

In the 2004 Lok Sabha election, CPI(M) contested 32 seats, RSP 4 seats, CPI 3 seats and AIFB 3 seats. CPI(M) won 26 seats, CPI 3 seats, AIFB 3 seats and RSP 3 seats. The Left Front vote in West Bengal reached 18,766,404 votes (50.7% of the votes cast in the state).

Seventh Left Front government

2006 assembly election

In the 2006 West Bengal Legislative Assembly election the Left Front won 234 out of 294 seats and received 19,800,148 votes (including votes for allies, representing 50.2% of the statewide vote). The Left Front had contested 290 seats (210 CPI(M), 34 AIFB, 23 RSP, 13 CPI, 4 WBSP, 2 DSP, 2 MFB, 1 RCPI, 1 BBC).

In selecting candidates, the Left Front denied tickets to 64 incumbent legislators (52 from CPI(M), 8 from AIFB, 2 from WBSP, 1 from RSP, 1 from CPI), seeking to rejuvenate the list of candidates.

Out of the 234 seats won by the Left Front, 175 were won by CPI(M) candidates, 8 from CPI, 23 AIFB, 20 RSP, 4 WBSP, 2 MFB and 1 DSP. Most of the incumbent ministers were re-elected, exceptions being Prabodh Chandra Sinha (Parliamentary Affairs, DSP) and Mohammed Amin (Labour, CPI(M)). The Left Front Chief Whip, Rabin Deb, also lost his seat.

In 4 seats the Left Front supported other parties, two each for the Rashtriya Janata Dal and the Nationalist Congress Party. One of the RJD candidates was elected.

The Left Front significantly improved its performance in comparison to 2001 in the North 24 Parganas and South 24 Parganas districts. Only in the Cooch Behar District did the Left Front suffer a reversal of fortunes. Following the 2006 election, Tata Motors announced that it would establish its Tata Nano car factory in Singur. A major land dispute surged. Likewise, a land dispute issue surged over a planned chemical factory in Nandigram. These two conflicts put severe strains on the Left Front 2007–2008. On 8 September 2008 the Left Front and the opposition All India Trinamool Congress reached an agreement on Singur dispute but in the next month Tata Motors announced that it withdrew from West Bengal.

In 2008 the Left Front won an overwhelming majority of the seats in the Howrah Municipal Corporation; out of a total of 50

seats in the Municipal Corporation CPI(M) won 26, CPI 3, AIFB 2, RCPI 1 and 1 seat for Janata Dal (Secular).

2009 Lok Sabha election

The Left Front suffered a set-back in the 2009 Lok Sabha election. The CPI(M) contested 32 seats, CPI 3 seats, AIFB 3 seats, RSP 4 seats. CPI(M) won 9 seats from West Bengal, CPI, AIFB and RSP two seats each. The combined Left Front vote in West Bengal was 18,503,157 votes (43.3% of the votes cast in the state).

Left Front in opposition (2011-now)

2011 assembly election

In the 2011 West Bengal Legislative Assembly election the Left Front failed to gain a majority of seats and the 34-year streak of continuous state government was broken.

CPI(M) had fielded 210 candidates, CPI 14, AIFB 34, RSP 23, SP 5, DSP 2, RCPI 2, MFB 2 and BBC 1. In one seat Left Front had supported a RJD candidate.

The combined strength of the Left Front in the newly elected assembly stood at 62; CPI(M) managed to win 40 seats, CPI 2, AIFB 11, RSP 7, SP 1 and DSP 1. The vote of Left Front and its allies had been 19,555,844 (41%).

For the first time since 1977, MFB lost the Tarakeswar seat.

Loss of Howrah

In 2013 the Left Front was routed in the elections to the Howrah Municipal Corporation, losing control over the town for the first time in three decades. CPI(M) managed to win solely two out of 50 wards, all other Left Front partners drew blank. The incumbent CPI(M) mayor Mamta Jaiswal lost her seat. On the same day the Left Front lost also lost the local election in Jhargram, winning 1 out of 17 seats.

2014 Lok Sabha Election

Ahead of the 2014 Lok Sabha election the Samajwadi Party (with whom the WBSP had merged) parted ways with the Left Front. The Samajwadi Party led by Kiranmoy Nanda (for many years the Fisheries Minister in the Left Front cabinets) had demanded that the Left Front allocate Lok Sabha seats to the party, a request that CPI(M) had refused.

The Left Front fielded 32 CPI(M) candidates to the Lok Sabha, 4 RSP candidates, 3 CPI candidates and 3 AIFB candidates. 26 out of the 42 candidates were new contestants. Out of the 42 candidates, only 2 CPI(M) candidates were elected. The Left Front vote in West Bengal was 15,287,783 votes (29.9% of the votes cast in the state).

17-Party Alliance

In October 2014 a broader platform of cooperation between West Bengal left parties emerged, encompassing the ten Left Front parties (CPI(M), CPI, AIFB, RSP, DSP, RCPI, MFB, BBC, Workers Party of India, Bolshevik Party of India) as well as the

Socialist Unity Centre of India (Communist), the Communist Party of India (Marxist-Leninist) Liberation, the Provisional Central Committee, Communist Party of India (Marxist-Leninist), the Party of Democratic Socialism, the Communist Party of Bharat and the CRLI. In 2014 the 16 party alliance pledged to commemorate 6 December (the day of the destruction of Babri Masjid) as Communal Harmony Day. As of 2015 Samajwadi Party was again a Left Front member, expanding the alliance to 17 parties. In July 2016 Janata Dal (United), Rashtriya Janata Dal and the Nationalist Congress Party also joined the left parties in protests against price hikes.

2016 Assembly Election

Ahead of the 2016 West Bengal Legislative Assembly election the Left Front presented a first list with 116 candidates on 7 March 2016.

The list included 69 new candidates, 16 women and 25 candidates from religious minorities. At the time the Left Front was engaged in building a broader front with parties like Janata Dal (United) and NCP against the Trinamool Congress government. Moreover, an electoral understanding with the Indian National Congress was being sought. A second list of 84 candidates was released on 10 March 2016, to the displeasure of INC leaders as 14 constituencies on the Left Front list were already being contested by INC. The second list included 52 new candidates, 9 women and 20 Muslims. Apart from the 84 Left Front candidates, two candidates each from JD(U) and RJD were announced. Dialogue between Left Front and INC continued after the release of the Left Front second list.

Ahead of the 2016 election Nanda and his SP again resigned from the Left Front, citing opposition to the electoral tie-up with the Indian National Congress.

After a period of dispute between CPI(M) and INC over the Tarakeswar seat, it was agreed that NCP would field a candidate there. MFB continued to contest the Jamapur seat, however.

As per the Left-Congress electoral understanding, RCPI was requested to withdraw its candidate from the Hansan seat. The candidate did however contest anyway, against the wishes of the Left Front. He got 751 votes.

CPI(M) contested 147 seats, CPI 11, AIFB 25, RSP 19, DSP 2 and MFB 1. In total the Left Front won 32 seats; CPI(M) won 25 seats, AIFB 2, RSP 3, CPI 1 and MFB 1. The combined Left Front vote (excluding allies) was 14,216,327 (26% of the votes in the state).

Departure of DSP

On 30 July 2017, DSP announced that it had broken its links with the Left Front.

Initiatives during the Covid-19 Lockdown and other activities

CPI(M) party-supported canteen (Sromojibi Canteen) had given food packets to labourers and poor people in various parts of Kolkata at a subsidised rate during the lockdown and has continued even after that. Strategies were implemented to

combat COVID-19 and the destruction caused by cyclone Amphan especially in the Sunderbans on 20th May, 2020 and its cadres and volunteers rushed in to help with basics like soap, food grains, cooked food and tarpaulin for people whose homes were destroyed.

In the last few months, the CPI(M) has held rallies, conducted volunteer work and other activities in different parts of East and West Midnapore, in areas which had been difficult to access for them for over 10 years due to crude impeachment against the *red jhanda* by the TMC and Maoists alike.

In the past two years after the reopening of all the party offices, the cadres are actively involved in various social welfare schemes with the participation of the youth in organising community kitchens, free ration and vegetable markets, safe housing, distribution of kits to students for studies and clothes to the underprivileged.

Among many social welfare initiatives, now the Left has set up Rs. 50 health clinics and safe houses for the poor who cannot afford expensive medical care facilities amid the Covid-19 pandemic in the state. The CPI(M) has converted nearly 30 party offices into safe homes for poor people who don't have extra room at their dwellings for quarantining in case of Covid-19 infection.

2021 Assembly Elections

On the eve of the 2021 West Bengal Legislative Assembly election Left Front reiterated a political alliance with the Indian National Congress in order to uproot the Trinamool state government and oppose the advance of BJP in West

Bengal. The Left Front raised slogans for the creation of a Left democratic secular government. The Indian Secular Front led by the Furfura Sharif cleric Abbas Siddique also joined the Mahajot and has finalized its seat-sharing capacities with the alliance. The new alliance is termed as Sanjukta Morcha (translated in English: The United Front) [Bengali: সংযুক্তমোর্চা]. The Left Parties will contest in 165 seats, Congress in 92 and ISF in 37 seats. As per the deal, out of 175 seats, CPI(M) is contesting on 137 seats, AIFB on 18 seats, RSP on 11 seats, CPI on 10 seats and the MFB on 1 seat. The Left Front did not win any seats out of the 292 seats or which votes were counted on 2nd May, 2021. The alliance, "Sanjukta Morcha" had won 1 seat in total, the sole seat being won by Nawsad Siddique in Bhangar Constituency of West Bengal. This becomes the first time when, the West Bengal Vidhan Sabha is devoid of any Left Front or INC MLA. The runner ups of CPIM stand as follows:

- Md. Kamal Hossain in Bhagabangola
- Md. Rostafizur Rahaman in Domkal
- Saiful Islam Molla in Jalangi
- Dr. Sujan Chakraborty in Jadavpur

The CPI(M) had, for a long time been running the *Sramajibi Canteens* and the *Red Volunteers* programme and plans to continue the same, even after bagging only 4.6% of the vote share.

All India Trinamool Congress

The **All India Trinamool Congress** (abbr.**AITC** or **TMC**; translation: *All India Grassroots Congress*) is an Indian political party which is predominantly active in West Bengal.

The party is led by current chief minister of West Bengal Mamata Banerjee. Following the 2019 general election, it is currently the fourth-largest party in the Lok Sabha with 22 seats. Since its inception the party has been at the forefront of the anti-communist movement in West Bengal.

History

After being a member of the Indian National Congress for over 26 years, Mamata Banerjee established "Trinamool Congress", which was registered with the Election Commission of India during mid-December 1997. The Election Commission allotted to the party an exclusive symbol of *Jora Ghas Phul*. On 2 September 2016 election commission recognized AITC as a national political party.

Nandigram movement

In December 2006, the people of Nandigram were given notice by Haldia Development Authority that major portion of Nandigram would be seized and 70,000 people be evicted from their homes. People started movement against this land acquisition and *Trinamool Congress* led the movement. Bhumi Uchchhed Pratirodh Committee (BUPC) was formed against land grabbing and eviction. On 14 March 2007 the police opened fire and killed 14 villagers. Many more went missing. Many sources claimed (and which was supported by the Central Bureau of Investigation in its report) that armed Communist Party of India (Marxist) cadres, along with police, fired on protesters in Nandigram Many intellectuals protested on the streets and this incident gave birth to a new movement. SUCI (C) leader Nanda Patra led the movement.

Post-Nandigram/Singur elections

In the 2009 *Lok Sabha* election, Trinamool Congress won 19 seats in West Bengal.

In the 2010 Kolkata municipal election, the party won 97 out of 141 seats. It also won a majority of other municipalities.

Presence in other states

Trinamool in Tripura

In 2010, Tripura Pradesh Trinamool Congress was working in Tripura to establish a *Ma Mati Manush* government in the state.

Under the leadership of former leader of opposition and then MLA of Tripura, Sudip Roy Barman, six MLAs defected from INC along with many ex ministers, ex members of legislative assembly, senior state and district leaders along with thousands of party workers and supporters who joined AITC to fight the communists in Tripura. Barman himself later defected to the Bharatiya Janata Party along with 5 other AITC MLAs of Tripura Legislative Assembly in the presence of Himanta Biswa Sarma and Dharmendra Pradhan after they cross voted against party lines in the 2017 Indian presidential election.

Trinamool in Manipur

In the 2012 assembly elections of Manipur, AITC won 8 seats, got 10% of the total votes & became the only opposition party in the Manipur Legislative Assembly. In the 2017 assembly

elections the party won only one seat from Bishnupur & polled 5.4% of the total votes cast in the elections. Its lone Member of Legislative Assembly, Tongbram Robindro Singh supported Bharatiya Janata Party in forming government in Manipur in 2017. Later, Robindro Singh withdrew support from the Bharatiya Janata Party following the disqualification of 7 of its members to grant support the Indian National Congress as of 18 June 2020.

Trinamool in Assam

In the 2001 Assam Legislative Assembly election, Jamal Uddin Ahmed won Badarpur constituency. He was a Trinamool Congress candidate.

Trinamool in Kerala

Since 2012 the state unit is there in Kerala. Party fought in 2014 Indian general election .

Electoral performance

In the 2011 West Bengal Legislative Assembly election, the Trinamool Congress-led alliance that included the INC and SUCI(C) won 227 seats in the 294-seat legislature. Trinamool Congress alone won 184 seats, enabling it to govern without an alliance. Subsequently, it won a by-election in Basirhat and two Congress MLAs switched to TMC, giving it a total of 187 seats.

Now the party has got a National Party Status, expanding its base in Tripura, Assam, Manipur, Odisha, Tamil Nadu, Kerala,

Sikkim, Haryana and Arunachal Pradesh. In Kerala, the party contested from five seats in 2014 general elections.

On 18 September 2012, TMC Chief, Mamata Banerjee, announced her decision to withdraw support to the UPA after the TMC's demands to undo government-instituted changes including FDI in retail, increase in the price of diesel and limiting the number of subsidised cooking gas cylinders for households, were not met.

In the 1998 Lok Sabha polls, TMC won 7 seats. In the next Lok Sabha election that was held in 1999, Trinamool Congress won 8 seats with BJP, thus increasing its tally by one. In 2000, TMC won the Kolkata Municipal Corporation Elections. In the 2001 Vidhan Sabha elections, TMC won 60 seats with Congress(I). In the 2004 Lok Sabha elections, TMC won 1 seat with BJP. In the 2006 Vidhan Sabha elections, TMC won 30 seats with BJP.

In the 2011 West Bengal Legislative Assembly election, TMC won a majority of 184 seats (out of 294). Mamata Banerjee became the Chief Minister. In the following 2016 West Bengal Legislative Assembly election, TMC retains its majority and won 211 seats (out of 294).

Political slogan

Ma Mati Manush (Bengali: মা মাটি মানুষ) was primarily a slogan, coined by All India Trinamool Congress chief and current Chief Minister Mamata Banerjee. The term is literally translated as "Mother, Motherland and People". The slogan became very popular in West Bengal at the time of the 2011 assembly

election. Later, Mamata Banerjee wrote a Bengali book with the same title. A song was also recorded with the same title to glorify the theme. According to a report published in June 2011, it was one of the six most popular political slogans in India at that time.

ECI status

After the 2014 Indian general elections, AITC has a national party status, because AITC had received 6% of the vote from five different states (West Bengal, Manipur, Tripura, Jharkhand, Assam). In 2016, the party was recognised as state party in four states (West Bengal, Tripura, Arunachal Pradesh and Manipur), Kerala satisfying one of the conditions of the Election Commission.

Although after the 2019 Indian general election, the party status got under revision by the Election Commission of India.

Leadership

The highest decision-making body of the party is its Core Committee.

- Mamata Banerjee – Founder, National Chairperson, Leader of the party in the West Bengal Legislative Assembly and Chief Minister of West Bengal.
- Subrata Bakshi – National President.MP, Rajya Sabha
- Yashwant Sinha – National Vice President. Ex Finance Minister Of India.

- Abhishek Banerjee- General Secretary of All India Trinamool Congress.
- Subrata Mukherjee – Cabinet Minister, Panchayat and Public Health Engineering, Govt of WB.
- Derek O'Brien -National Spokesperson and Leader of the party in the Rajya Sabha.
- Partha Chatterjee – General Secretary (West Bengal Trinamool Congress), Deputy Leader of the party in the West Bengal Legislative Assembly.
- Sudip Bandyopadhyay – Leader of the party in the Lok Sabha.
- Kakoli Ghosh Dastidar – Deputy leader of the party in the Lok Sabha.
- Kalyan Banerjee – Chief whip of the party in the Lok Sabha.
- Sukhendu Shekhar Roy -Deputy Leader in Rajya Sabha.
- Firhad Hakim – Mayor of Kolkata, Cabinet Minister, Transport Dept, Govt of WB.

Chapter 25

Pranab Mukherjee, the 13th President of India

Pranab Kumar Mukherjee (11 December 1935 – 31 August 2020) was an Indian statesman who served as the 13th President of India from 2012 until 2017. In a political career spanning five decades, Mukherjee was a senior leader in the Indian National Congress and occupied several ministerial portfolios in the Government of India. Prior to his election as President, Mukherjee was Union Finance Minister from 2009 to 2012. He was awarded India's highest civilian honour, the Bharat Ratna, in 2019, by the President of India, Ram Nath Kovind.

Mukherjee got his break in politics in 1969 when the then Prime Minister Indira Gandhi helped him get elected to the Rajya Sabha, the upper house of Parliament of India, on a Congress ticket. Following a meteoric rise, he became one of Gandhi's most trusted lieutenants and a minister in her cabinet in 1973. Mukherjee's service in a number of ministerial capacities culminated in his first stint as Finance Minister of India in 1982–84. He was also the Leader of the House in the Rajya Sabha from 1980 to 1985.

Mukherjee was sidelined from Congress during the premiership of Rajiv Gandhi. Mukherjee had viewed himself and not the inexperienced Rajiv, as the rightful successor to Indira following her assassination in 1984. Mukherjee lost out in the

ensuing power struggle. He formed his own party, the Rashtriya Samajwadi Congress, which merged with Congress in 1989 after reaching a consensus with Rajiv Gandhi. After Rajiv Gandhi's assassination in 1991, Mukherjee's political career was revived when Prime Minister P. V. Narasimha Rao appointed him Planning Commission head in 1991 and foreign minister in 1995. Following this, as elder statesman of Congress, Mukherjee was the principal architect of Sonia Gandhi's ascent to the party's presidency in 1998.

When the Congress-led United Progressive Alliance (UPA) came to power in 2004, Mukherjee won a Lok Sabha (the popularly elected lower house of Parliament) seat for the first time. From then until his resignation in 2012, he held a number of key cabinet portfolios in Prime Minister Manmohan Singh's government – Defence (2004–06), External Affairs (2006–09), and Finance (2009–12) – apart from heading several Groups of Ministers (GoMs) and being Leader of the House in the Lok Sabha. After securing the UPA's nomination for the country's presidency in July 2012, Mukherjee comfortably defeated P. A. Sangma in the race to the Rashtrapati Bhavan (the Indian presidential residence), winning 70 percent of the electoral-college vote.

In 2017, Mukherjee decided not to run for re-election and to retire from politics after leaving the presidency due to "health complications relating to old age."

His term expired on 25 July 2017. He was succeeded as President by Ram Nath Kovind. In June 2018, Mukherjee became the first former President of India to address a Rashtriya Swayamsevak Sangh (RSS) event.

Early life and education

Pranab Mukherjee was born into a Bengali Brahmin family in Mirati, a village in the Bengal Presidency of British India (now in Birbhum district, West Bengal). His father, Kamada Kinkar Mukherjee, was active in the Indian independence movement and was a member of the West Bengal Legislative Council between 1952 and 1964 as a representative of the Indian National Congress; he was also a member of AICC. His mother was Rajlakshmi Mukherjee. He had two siblings: older sister Annapurna Banarjee (1928–2020) and older brother Piyush Mukherjee (1931–2017).

Mukherjee attended Suri Vidyasagar College in Suri (Birbhum), which was then affiliated to the University of Calcutta. He subsequently earned an MA degree in political science and history and an LL.B. degree, both from the University of Calcutta

He was an upper-division clerk in the Office of the Deputy Accountant-General (Post and Telegraph) in Calcutta. In 1963, he became a lecturer (Assistant Professor) of Political Science at Vidyanagar College, Kolkata, affiliated to the University of Calcutta and he also worked as a journalist at *Desher Dak* (Call of the Motherland) before entering politics. Mukherjee first ran for public office in 1969, when he won a seat in the Rajya Sabha (upper house) of the Indian parliament as a member of the Bangla Congress, which soon merged with the Congress Party. He served an additional four terms, although he left that chamber in 2004 and contested and won a seat in the Lok Sabha (lower house). He served there until mid-2012, when he ran for president of India.

Political career

Mukherjee started her political career in 1967 as a founding member of the Bangla Congress. Ahead of the 1967 election, he played a crucial role in forging the United Front alliance against the Indian National Congress. In 1969, he managed the successful Midnapore by-election campaign of an independent candidate, V. K. Krishna Menon. He became a member of the Rajya Sabha (the upper house of Indian parliament) in July 1969 on a Bangla Congress ticket. Mukherjee soon became the medium of exchanging confidential notes between Indira Gandhi and Ajoy Mukherjee. In 1972, Indira Gandhi recruited him to the Indian National Congress along with merging the Bangla Congress into the party. Mukherjee was re-elected to the house in 1975, 1981, 1993, and 1999.

He became a Gandhi loyalist and was often described as her "man for all seasons." Mukherjee's rise was rapid in the early phase of his career and he was appointed Union Deputy Minister of Industrial Development in Indira Gandhi's cabinet in 1973. He was active in the Indian cabinet during the controversial Internal Emergency of 1975–77. Ruling Congress politicians of the day including Mukherjee were accused of using extra-constitutional powers to "wreck established norms and rules of governance". Following Congress's defeat in the 1977 general elections, the newly formed Janata government-appointed Shah Commission indicted Mukherjee; however, the commission was itself indicted in 1979 for stepping "outside its jurisdiction". Mukherjee emerged unscathed and rose through a series of cabinet posts to become Finance Minister from 1982 to 1984.

His term was noted for his work in improving the finances of the government, which enabled Gandhi to score a political point by returning the last instalment of India's first IMF loan. As Finance Minister, Mukherjee signed the letter appointing Manmohan Singh as Governor of the Reserve Bank of India.

In 1979, Mukherjee became Deputy Leader of the INC in the Rajya Sabha, and in 1980, he was appointed Leader of the House. He was considered the top-ranking Indian cabinet minister and he presided over cabinet meetings in the absence of the Prime Minister.

Mukherjee was sidelined from the INC following the assassination of Indira Gandhi. Although he was much more experienced in politics than Indira's son, Rajiv Gandhi, it was Rajiv who gained control. Mukherjee lost his position in the cabinet and was sent to manage the regional West Bengal Pradesh Congress Committee. He was considered to be Indira's likely successor and, siding with those within his party who aligned themselves against Rajiv Gandhi, Mukherjee was sidelined and eventually expelled from the mainstream.

In 1986, Mukherjee founded another party, the Rashtriya Samajwadi Congress (RSC), in West Bengal. The RSC and INC merged three years later after a compromise was reached with Rajiv Gandhi. The RSC had fared terribly in the 1987 Assembly polls in West Bengal. Many analysts, over the years, have attributed the muting of Mukherjee's political aspirations as the supreme leader to his inability to emerge as a magnetic mass leader. On later being asked whether he ever desired to become Prime Minister, Mukherjee replied, "7 RCR was never my destination." Zee News noted: "The statement assumes heft

in the light of the longstanding speculation that Mukherjee, as one of the doyens of Congress, always nursed an ambition to occupy the top executive post".

Mukherjee's political career revived following the Assassination of Rajiv Gandhi in 1991, when P. V. Narasimha Rao chose to appoint him as deputy chairman of the Indian Planning Commission and subsequently as a union cabinet minister. He served as External Affairs Minister for the first time from 1995 to 1996 in Rao's cabinet.

Mukherjee was considered to be a Gandhi family loyalist and the principal architect of Sonia Gandhi's entry into politics, a mentoring responsibility he was believed to have continued shouldering. He was made General Secretary of the AICC in 1998–99 after Sonia Gandhi became Congress President. Mukherjee was made President of the West Bengal Congress in 2000 and held the position until his resignation in 2010. He had earlier held the position in 1985.

Mukherjee became Leader of the House in the Lok Sabha in 2004. He contested and won a Lok Sabha seat from Jangipur in West Bengal, which he would later retain in 2009.

It was speculated in 2004 that Mukherjee would be made Prime Minister of India after Sonia Gandhi declined to become Prime Minister; however, Manmohan Singh was chosen instead.

Mukherjee was briefly considered for the post of the largely ceremonial Indian presidency in 2007, but his name was subsequently dropped after his contribution in the Union Cabinet was considered practically indispensable.

He held many important posts in the Manmohan Singh government: He had the distinction of being the minister for various high-profile ministries, including Defence, Finance, and External Affairs. Apart from being Leader of the House in the Lok Sabha and Bengal Pradesh Congress Committee President, he also headed the Congress Parliamentary Party and the Congress Legislative Party, which consist of all the Congress MP's and MLA's in the country.

Mukherjee ended his affiliation with the Indian National Congress and retired from active political life following his election as president in 2012. *The Economic Times* had noted: "[the] decades of activity in critical all-rounder roles make [Mukherjee's] exit both a structural and generation shift. With him, the last of the Congress triumvirate – along with Rao and R. Venkataraman – who formed the core team of Indira/Rajiv regimes bows out. While Rao became PM, Pranab's political marathon too ends where Venkataraman's did, at the Rashtrapati Bhavan".

Political party role

Mukherjee was "very well respected within the party social circles". Media accounts describe him as having "a reputation as a number-crunching politician with a phenomenal memory and an unerring survival instinct".

He became a member of the Congress Working Committee on 27 January 1978. He also became a member of the Central Parliamentary Board of the All India Congress Committee (AICC) that year. Mukherjee briefly held the position of treasurer of the AICC and the Congress party in 1978.

He was appointed chairman of the Campaign Committee of the AICC for conducting National Elections to Parliament in 1984, 1991, 1996, and 1998. He was chairman of the Central Election Coordination Committee of the AICC from 28 June 1999 to 2012. He was appointed to the Central Election Committee on 12 December 2001. Mukherjee was appointed General Secretary of the AICC in 1998. In 1997, he was voted Outstanding Parliamentarian by the Indian Parliamentary Group.

After Sonia Gandhi reluctantly agreed to join politics, Mukherjee was one of her mentors, guiding her through difficult situations with examples of how her mother-in-law, Indira Gandhi, would have done things. His talents were on display during the negotiations for the Patents Amendment Bill in early 2005. Congress was committed to passing an IP bill, but their allies in the United Progressive Alliance from the Left front had a long tradition of opposing some of the monopoly aspects of intellectual property. Mukherjee, as Defence Minister, was not formally involved but was roped in for his negotiation skills. He drew on many old allies including the CPI-M leader Jyoti Basu (former Chief Minister of West Bengal), and formed new intermediary positions, which included product patents. Then, he had to convince his own colleagues, including commerce minister Kamal Nath, who at one point said..."An imperfect legislation is better than no legislation". Finally, on 23 March 2005, the bill was approved.

India Today wrote that Mukherjee's role in "skillfully pushing through the historic 123 Agreement and treaty with the Nuclear Suppliers Group" may have saved the UPA-II government from the 2008 motion of no confidence.

Mukherjee played a crucial role in steering the Cabinet pre-Lok Sabha elections when Prime Minister Manmohan Singh underwent a heart bypass surgery in 2008–09 by taking additional charges as chairman of the Cabinet Committee of Political Affairs and Union Minister in the Finance Ministry despite already being Union Minister of External Affairs.

Mukherjee's political skills and long experience in government have also led him to head a large number of committees of ministers in the government. At the time of his resignation, on being nominated as the UPA's presidential candidate, Mukherjee was heading several Groups of Ministers (GoMs) and Empowered Groups of Ministers (EGoMs).

Union Cabinet Minister

Minister of Defence

Manmohan Singh appointed Mukherjee as the Minister of Defence of India when the Congress Party once again came to power in 2004. Mukherjee held the post until 2006. He expanded co-operation with the United States during his tenure. *The Times of India* reported on the Wikileaks cables release and noted how the U.S. was full of praise for the "uniformed leadership" of Indian armed forces. Mukherjee in June 2005 had inked the ten-year Indo-US Defence Framework deal.

Despite increasing co-operation with the United States, Mukherjee maintained that Russia would remain India's 'topmost' defence partner. He asserted that "Russia has been and will remain India's largest defence partner in the years to

come" while inaugurating the 5th session of the Indo-Russian Inter-Governmental Commission on Military-Technical Cooperation (IRIGC-MTC) in Moscow in 2005.

Russia and India held their first joint anti-terror war games in Rajasthan in October 2005, during which Mukherjee and Russian Defence Minister Sergei Ivanov narrowly escaped injury after a heavy mortar landed several metres from their platform. The Russian ministry subsequently declared its hopes to follow up joint military exercises in India with further joint exercises on Russian territory.

Minister of External Affairs

Mukherjee was appointed External Affairs Minister of India in 1995. Under his leadership, India was made "Full Dialogue Partner" of ASEAN as part of the Look East foreign policy initiated by Narasimha Rao. Mukherjee left the position in 1996.

His second term began in 2006. He oversaw the successful signing of the U.S.-India Civil Nuclear Agreement with the U.S. government and then with the Nuclear Suppliers Group, allowing India to participate in civilian nuclear trade in spite of not having signed the Nuclear Non-Proliferation Treaty. Mukherjee played a crucial role in mobilising world opinion against Pakistan after the 2008 Mumbai attacks. He left the position a year later to take over the Finance Ministry of India.

When asked what legacy he wanted to leave behind as Foreign Minister of India, Mukherjee replied, "As the [man] who prepared Indian diplomacy to address the challenges of a more globalised, interdependent and uncertain world".

Minister of Commerce and Industry

Mukherjee thrice served as Commerce Minister of India. His first stints were in the Indira Gandhi government from 1980 to 1982 and again in 1984. His third stint in the 1990s saw him contribute significantly to the negotiations which led to the establishment of the World Trade Organization.

Minister of Finance

Mukherjee's first stint as the Finance Minister of India was during the Indira Gandhi government in 1982. He presented his first annual budget in 1982–83. His first term was noted for the work he did to improve the finances of the government and for successfully returning the last instalment of India's first IMF loan. Mukherjee signed the letter appointing Manmohan Singh as the Governor of the Reserve Bank of India in 1982. He was accused of patronage practices in the Ambani–Wadia industrial feuds.

Mukherjee was credited with being an early reformer of the Indian economy. *India Today* wrote: "Operation Forward, which [Mukherjee] and then Industries Minister Charanjit Chanana launched in the early 1980s, started the liberalisation process that flowered under Rao and Manmohan Singh". A Left-wing magazine once commented that "socialism did not grow out of the pipe Mukherjee smoked".

Mukherjee was removed from his position as Finance Minister by Rajiv Gandhi in 1984. Gandhi had wished to bring in his own team of staff to govern India. Mukherjee was replaced even

though he was rated as the best Finance Minister in the World that year according to a survey by Euromoney magazine.

He returned to handling the finances of India during the premiership of Narasimha Rao, after being appointed Deputy Chairman of the Planning Commission. During Mukherjee's tenure of 1991 to 1996, Dr. Manmohan Singh as Finance Minister oversaw many economic reforms to end the Licence Raj system and help open the Indian economy.

Mukherjee once again became the Finance Minister of India in 2009. He presented the annual budgets in 2009, 2010, and 2011. The 2010–11 budget included the country's first explicit target to cut public debt as a proportion of the GDP and Mukherjee targeted a budget deficit reduction of 4.1% of the GDP in the fiscal year 2012–13, from 6.5% in 2008–09.

He implemented many tax reforms, including scrapping the Fringe Benefits Tax and the Commodities Transaction Tax. He implemented the Goods and Services Tax during his tenure. These reforms were well received by major corporate executives and economists. The introduction of retrospective taxation, however, has been criticised by some economists.

Mukherjee expanded funding for several social sector schemes including the Jawaharlal Nehru National Urban Renewal Mission. He also supported budget increases for improving literacy and health care. He expanded infrastructure programmes such as the National Highway Development Programme. Electricity coverage was also expanded during his tenure. Mukherjee also reaffirmed his commitment to the principle of fiscal prudence as some economists expressed concern about the rising fiscal deficits during his tenure, the

highest since 1991. Mukherjee declared the expansion in government spending was only temporary.

In 2010, he was awarded "Finance Minister of the Year for Asia" by *Emerging Markets*, the daily newspaper of record for the World Bank and the International Monetary Fund (IMF). Mukherjee was praised for "the confidence [he] has inspired in key stakeholders, by virtue of his fuel price reforms, fiscal transparency and inclusive growth strategies". *The Banker* also recognised him as "Finance Minister of the Year."

Mukherjee's final years at the finance ministry were not considered a success. The NDTV, upon his resignation in June 2012, wrote: "There [had] been a clamour from many quarters for a change in the Finance Ministry, with Mr Mukherjee having faced flak for several decisions where politics seemed to overwhelm economic imperatives".

Other positions

Mukherjee was chairman of the Indian Statistical Institute in Kolkata. He also held the following posts: chairman and president of the Rabindra Bharati University and the Nikhil Bharat Banga Sahitya Sammelan; trustee of the Bangiya Sahitya Parishad and the Bidhan Memorial Trust. He also served on the Planning Board of the Asiatic Society.

President of India

Mukherjee was nominated as the presidential candidate of the United Progressive Alliance on 15 June 2012 after considerable political intrigue. The elections were scheduled to be

conducted on 19 July 2012 and the results were expected to be announced on 22 July 2012. The nominee of the National Democratic Alliance (NDA) was P. A. Sangma. To file his nomination for the presidential poll on 28 June, Mukherjee resigned from the government on 26 June 2012.

In the election, Mukherjee received 713,763 votes, while Sangma had 315,987. In his victory speech, delivered outside his residence before the results were officially announced, he said:

I would like to express my deep gratitude to all of you who are waiting. The figure has crossed 7 lakhs, only one state remains. The final figure will come from the returning officer. I would like to thank the people of India for electing me to this high office. The enthusiasm, the warmth of the people was remarkable. I have received much more from the people of this country, from the Parliament, than I have given. Now I have been entrusted with the responsibility of protecting and defending the constitution as President. I will try and justify the trust of the people. I would like to reciprocate the congratulation Shri Purno Sangma has extended.

Mukherjee was sworn in by the Chief Justice of India on 25 July 2012, becoming the first Bengali to hold the post of President of India. After being administered the oath of office, he stated that we are in the midst of a fourth world war of terror (the third was the Cold war) and what minutes of peace can achieve cannot be achieved in many years of war.

Congress President Sonia Gandhi and Prime Minister Manmohan Singh both congratulated Mukherjee on his election as president. Former Communist leader Somnath Chatterjee

termed Mukherjee as one of "the best parliamentarians and statesmen of India" and said the country "has got the most able man for the top job". Opposition leader Sharad Yadav declared "the nation needed a president like Pranab Mukherjee". Delhi Chief Minister Sheila Dikshit commented and said Mukherjee will be "one of the wisest presidents". She further marvelled at the fact that parties in the opposition ranks supported Mukherjee. "Even the NDA broke up and wanted to vote for the president to be Pranab Mukherjee". The Bharatiya Janata Party (BJP) was reportedly "shocked" and "upset" at the cross-voting for Mukherjee by its legislative members. However, BJP party president Nitin Gadkari congratulated Mukherjee and said "I extend my hearty congratulations to Pranab Mukherjee on his election today as the new President of India". Gadkari further declared "I am sure that the country will make further development and progress. I wish him all success and a bright future".

Zee News noted: "What is striking about [Mukherjee] is that after more than four decades in public life, the Opposition had no ammunition against him after he was declared UPA's choice for President. In spite of Team Anna making some noise about him being involved in some corruption cases, it has been more or less an easy ride for Pranab to Raisina Hill. Once when Sonia Gandhi announced his name, most of the allies and the Opposition came on board. Whereas, NDA partner JD(U) saw no merit in opposing him, one of the bitter critics of the Congress Shiv Sena too toed the line a little too easily. This support was not for Congress but for [Mukherjee]".

Criminal Law (Amendment) Ordinance, 2013 was promulgated by Pranab Mukherjee on 3 February 2013, providing for the

amendment of the Indian Penal Code, Indian Evidence Act, and the Code of Criminal Procedure, 1973 on laws related to sexual offences. As of July 2015, President Mukherjee had rejected 24 mercy pleas including those of Yakub Memon, Ajmal Kasab, and Afzal Guru. Pranab Mukherjee becomes first President of India to reply all the mercy petitions in his term for the death row inmates and also replying the petitions of former Presidents.

In January 2017, Mukherjee announced that he would not contest the 2017 Presidential elections, citing "advanced age and failing health".

Personal life

Pranab Mukherjee married Suvra Mukherjee on 13 July 1957. Suvra Mukherjee was born at Narail, Bengal Presidency, British India. She moved to Kolkata while she was 10 and married Pranab in 1957. The couple had two sons and a daughter. Suvra died on 18 August 2015, aged 74, of heart failure, while Mukherjee was still in office. Their elder son, Abhijit Mukherjee, was a Congress MP from Jangipur, West Bengal, until 2019. He was elected in a by-election after his father vacated the seat. Before his election to the Lok Sabha, Abhijit was an MLA from Nalhati in Birbhum.

Mukherjee was inspired by Deng Xiaoping and quoted him quite frequently. His hobbies were reading, gardening, and music.

His daughter Sharmistha Mukherjee is a Kathak dancer and politician of the Indian National Congress.

Mukherjee celebrated the Durga Puja at his ancestral home in Mirati village. He used to make it a point to be at Mirati village every year to take part in the four-day rituals, the puja having a "social dimension" for him. "I want to avail this opportunity to be with the people of my area", Mukherjee said during a puja ceremony on 4 October 2011.

Illness and death

During the COVID-19 pandemic, on 10 August 2020, Mukherjee announced on Twitter that he had tested positive for COVID-19 prior to a surgery to remove a blood clot in his brain. He was admitted to the hospital after accidentally slipping and falling in his bathroom. He was on ventilator support and in critical condition at the Army's Research and Referral (R&R) hospital in Delhi.

On 13 August, the hospital reported that Mukherjee was in a deep coma after he underwent brain surgery; however, his vital parameters remained stable. On 19 August, the R&R said that Mukherjee's health condition had declined as he had developed a lung infection. On 25 August, his renal parameters became "slightly deranged", with the condition worsening days later.

Mukherjee died on 31 August 2020, aged 84, which was confirmed by his son Abhijit Mukherjee via Twitter. His death came after the attending hospital confirmed that his health had deteriorated early that day, stating that he had been in septic shock since a day earlier, which was caused by his lung infection.

Condolences poured in immediately from leaders of both India and other nations. India's Prime Minister Narendra Modi, the President Ramnath Kovind, Vice President Venkaiah Naidu, Home Minister Amit Shah, and Congress leader Rahul Gandhi conveyed their condolences via Twitter. The President of Russia, Vladimir Putin, the President of Afghanistan, Ashraf Ghani, the President of the Maldives, Ibrahim Mohamed Solih, the Prime Minister of Bangladesh, Sheikh Hasina, the Prime Minister of Bhutan, Lotay Tshering, the Prime Minister of Sri Lanka, Mahinda Rajapaksa, and the Prime Minister of Nepal, K. P. Sharma Oli, were among foreign leaders who paid their respects. Sports players and actors from the country also voiced their sorrow.

The Government of India announced a seven-day period of state mourning between 31 August to 6 September, whereby the national flag would fly at half mast on all buildings wherever it is flown regularly. The West Bengal state government declared a closure of state-run offices for the following day as a mark of respect.

The funeral was held the following day, on 1 September at the Lodhi Road crematorium, with full state honours. The body was brought to the crematorium in a van instead of gun carriage due to COVID-19 pandemic restrictions in the country. His ashes were immersed into the Ganges river in Haridwar.

In popular culture

Mukherjee appeared in the Indian mock court television talk show *Aap Ki Adalat* (lit. 'Your Court') on India TV when he was

the Minister of Defence, discussing the UPA government's performance of in the past one year since the 2004 elections.

Honours

National honours

- India:
- Bharat Ratna (2019)
- Padma Vibhushan (2008)

Foreign honours

- Bangladesh:
- Recipient of the Bangladesh Liberation War Honour (5 March 2013)
- Ivory Coast:
- Grand Cross of the National Order of the Ivory Coast (14 June 2016)
- Cyprus:
- Grand Collar of the Order of Makarios III (28 April 2017)

Academic honours

- Hon. Doctor of Letters degree by the University of Wolverhampton, UK in 2011.
- Hon. D.Litt by Assam University in March 2012.
- Hon. Doctorate in Science by Visvesvaraya Technological University; Belgaum, Karnataka in 2012

- Hon. LL.D. by *President of Bangladesh* and *Chancellor Md. Zillur Rahman* at the University of Dhaka on 4 March 2013.
- DCL (Doctor of Civil Law) (honoris causa) by the University of Mauritius on 13 March 2013.
- Hon. Doctorate by Istanbul University on 5 October 2013.
- Honorary Doctorate from the University of Calcutta in on 28 November 2014.
- Hon. Doctorate in Political Science by the University of Jordan on 11 October 2015.
- Hon. Doctorate by Al-Quds University of Ramallah, Palestine on 13 October 2015.
- Hon. Doctorate by Hebrew University of Jerusalem, Israel on 15 October 2015.
- Hon. Doctorate by Kathmandu University, Nepal on 3 November 2016.
- Hon. Doctorate by Goa University on 25 April 2017.
- D.Litt. (Honoris Causa) by Jadavpur University on 24 December 2017.
- Hon. D.Litt by the University of Chittagong on 16 January 2018.

Other recognition

- Best Finance Minister in the World (1984), according to *Euromoney* magazine survey.
- Finance Minister of the Year for Asia (2010), by *Emerging Markets*, daily newspaper of record for the World Bank and IMF.
- Finance Minister of the Year (2010), by *The Banker*

- Honorary Citizenship of Abidjan, Ivory Coast, on 15 June 2016.

Offices held

Pranab Mukherjee's positions in chronological order:

- Union Minister of Industrial Development 1973–1974
- Union Minister of Shipping and Transport 1974
- Minister of State for Finance 1974–1975
- Union Minister of Revenue and Banking 1975–1977
- Treasurer of Congress Party 1978–79
- Treasurer of All India Congress Committee 1978–79
- Leader of House of Rajya Sabha 1980–85
- Union Minister of Commerce and Steel and Mines 1980–1982
- Union Minister of Finance 1982–1984
- Board of Governors of International Monetary Fund 1982–1985
- Board of Governors of World Bank 1982–1985
- Board of Governors of Asian Development Bank 1982–1984
- Board of Governors of African Development Bank 1982–1985
- Union Minister of Commerce and Supply 1984
- Chairman: Campaign Committee of Congress-I for conducting National Elections to Parliament, 1984 Indian general election, 1991 Indian general election, 1996 Indian general election and 1998 Indian general election

- Chairman of Group of 24 (a Ministerial Group attached to IMF and World Bank) 1984 and 2009–2012
- President of State Unit of Congress Party 1985 and 2000–08
- Chairman of Economic Advisory Cell of AICC 1987–1989
- Deputy Chairman of Planning Commission 1991–1996
- Union Minister of Commerce 1993–1995
- Union Minister of External Affairs 1995–1996
- President, SAARC Council of Ministers Conference 1995
- General Secretary of AICC 1998–1999
- Chairman of Central Election Coordination Committee 1999–2012
- Leader of House of Lok Sabha 2004–2012
- Union Minister of Defence 2004–2006
- Union Minister of External Affairs 2006–2009
- Union Minister of Finance 2009–2012
- President of India 25 July 2012 – 25 July 2017.

Books written

- *Beyond Survival: Emerging Dimensions of Indian Economy. S. Chand & Company. 1986. ISBN 0706926587.*
- *Off the Track: A Few Comments on Current Affairs. K. P. International. 1987.*
- *Challenges Before the Nation: Saga of Struggle and Sacrifice (Indian National Congress). Vikas Publishing House. 1993. ISBN 0706966236.*

- *A Centenary History of the Indian National Congress – Volume V: 1964–1984 (co-authored with Aditya Mukherjee). Academic Foundation Kolkata. 2011. ISBN 978-8171888641.*
- *Congress and the Making of the Indian Nation. Academic Foundation Kolkata. 2011. ISBN 978-8171888580.*
- *Thoughts and Reflections. Rupa Publications India. 2014. ISBN 978-8129134479.*
- *The Dramatic Decade: The Indira Gandhi Years. Rupa Publications India. 2015. ISBN 978-8129136015.*
- *The Turbulent Years: 1980–1996. Rupa Publications India. 2016. ISBN 978-8129137692.*
- *The Coalition Years: 1996–2012. Rupa Publications India. 2017. ISBN 978-8129149053.*
- *The Presidential Years: 2012–2017. Rupa Publications India. 2021. ISBN 978-9390356355.*

Chapter 26

2013 Indian Helicopter Bribery Scandal

Also referred to as the **AugustaWestland VVIP chopper deal**, the Indian helicopter bribery scandal by Congress led UPA Government refers to a multimillion-dollar corruption case in India, wherein money was paid to middlemen and Indian officials in 2006 and 2007 to purchase helicopters for high level politicians. As per the CBI, this amounted to ₹2.5 billion (US$35 million), transferred through bank accounts in the UK and UAE.

It came to light in early 2013, when an Indian national parliamentary investigation began into allegations of bribery and corruption involving several senior officials and a helicopter manufacturer AgustaWestland surrounding the purchase of a new fleet of helicopters. The scandal has been referred to as the **Chopper scam** or **Choppergate** by the media and popular press.

Several Indian Congress politicians and military officials were accused of accepting bribes from AgustaWestland in order to win the ₹3.6 billion (US$50 million) Indian contract for the supply of 12 AgustaWestland AW101 helicopters; these helicopters are intended to perform VVIP duties for the President of India and other important state officials. Ahmed Patel, political secretary to Congress President Sonia Gandhi, is alleged by Italian prosecutors to have received kickbacks

from the deal. A note presented in the Italian court, sent by middleman Christian Michel (who was extradited to India on 4 December 2018), asks Peter Hulett, an Agusta Westland employee, to target key advisors to Sonia Gandhi and lists their names as Prime Minister Manmohan Singh, Ahmed Patel, Pranab Mukherjee, M. Veerappa Moily, Oscar Fernandes, M. K. Narayanan and Vinay Singh. The note also contains the bribes to be paid out, divided as "AF" •6 million, "BUR" •8.4 million, "Pol" •6 million and "AP" •3 million. On 8 January 2018, the third Court of Appeals of Milan acquitted the defendants on all charges Abhay Tyagi was also accused to have received kickbacks worth ₹69,00,000.

The case continues to be investigated in India by the Indian government and the CBI.

Overview

The Indian Ministry of Defence (MoD) signed a contract to purchase 12 AgustaWestland AW101 helicopters in February 2010 for the Communication Squadron of Indian Air Force to carry the president, PM and other VVIPs. Controversy over the contract came to light on 12 February 2013 with the arrest of Giuseppe Orsi, the CEO of Finmeccanica, AgustaWestland's parent company by Italian authorities over corruption and bribery charges; the following day Indian Defence Minister A.K. Antony ordered a probe into the contract.

Critical events

- On 25 March 2013, India's Defence Minister A.K. Antony confirmed corruption allegations by stating:

"Yes, corruption has taken place in the helicopter deal and bribes have been taken. The CBI is pursuing the case very vigorously." As of June 2014, the Indian government has recovered a total amount of ₹20.68 billion (US$290 million) and has recovered around ₹16.2 billion (US$230 million) (45% of the total contract value ₹36 billion (US$500 million)) it had paid to AgustaWestland.

- On 8 April 2016, the Milan Court of Appeal, in a 225-page judgement, overturned a lower court verdict and convicted helicopter manufacturer AgustaWestland's executive Giuseppe Orsi to four years' imprisonment for paying a •30 million bribe to Indian politicians, bureaucrats and Indian Air Force officials.
- On 9 December 2016, the CBI arrested former Indian Air Force Chief S.P. Tyagi along with his cousin Sanjeev Tyagi and lawyer Gautam Khaitan. In September 2017, the CBI filed a formal chargesheet against S.P. Tyagi and nine others.
- On 16 December 2016, the Italian Supreme Court of *Cassazione* cancelled the April 2016 conviction sentence, and ordered a retrial to be held again in Milan.
- On 8 January 2018, the third Court of Appeals of Milan acquitted the defendants on all charges
- On 5 December 2018, Christian Michel, the alleged middleman was extradited to India from Dubai.
- On 31 January 2019, Another co-accused Rajeev Saxena and lobbyist Deepak Talwar were extradited to India from Dubai.

- On April 2019 Supplementary charge-sheet filed by the Enforcement Directorate mentioned name of the three journalists including Shekhar Gupta with Raju Santhanam and Manu Pubby.

Investigation

After a huge controversy and allegations of corruption, Defence Minister A.K. Antony, on 12 February, ordered an investigation by the Central Bureau of Investigation (CBI).

On 25 February 2013, CBI registered a Preliminary Enquiry (PE) against 11 persons including the former Indian Air Force Chief, Air Chief Marshal S.P. Tyagi, and his cousins, besides four companies. After carrying out the preliminary enquiry, the CBI found sufficient evidence and registered an FIR on 13 March. The FIR named 13 persons including: former Indian Air Force Chief, Air Chief Marshal S.P. Tyagi, his three brothers: Juli, Docsa and Sandeep, the brother of former Union minister Santosh Bagrodia, Satish Bagrodia, and Pratap Aggarwal (Chairman and Managing Director of IDS Infotech). The FIR also named four companies - Italy-based Finmeccanica, UK-based AgustaWestland and Chandigarh-based IDS Infotech and Aeromatrix.

In 2013, billionaire Indian arms dealer Abhishek Verma and his Romanian born wife Anca Neacsu were named suspects in this scandal. Abhishek had played the role of a middleman in the deal and had interfaced with the politicians in securing CCS clearance from the Cabinet Committee. This nexus was exposed by TimesNow TV with their global investigation. According to the investigators, part of the bribes from

AgustaWestland was sent to Abhishek's companies Atlas Defence Systems accounts in Mauritius, to Bermuda accounts of Atlas Group Ltd and the other part was diverted to his wife's front company in New York, Ganton Limited. These funds are suspected to have been sent to Indian politicians who were beneficiaries in this scandal. BJP leader Subramanian Swamy had first identified the role of Abhishek Verma and his wife Anca Neacsu in 2013 in several of his blogs and press-releases. Later in April 2017, the Verma couple were exonerated from these allegations of corruption by CBI Special Court of Judge Anju Bajaj Chandana.

In September 2015, a special CBI court issued an open non-bailable warrant (NBW) against Christian Michel based on a CBI report that he was needed to be questioned in the case to know how much amount he had received as "commission" in the deal. The CBI said that "Based on this arrest warrant, Interpol India would be requested to issue a Red Corner Notice against Christian Michel James and execute said warrant." In an interview to a newspaper, he denied any wrongdoing by stating that he had never met any "Gandhi" in his life.

Enforcement Directorate (ED) is investigating money laundering allegations. In March 2015, the ED traced and identified the properties worth around ₹ 1.12 crore owned by Christian Michel and issued a provisional attachment order. The ED claimed that Michel bought a flat in south Delhi's Safdarjung Enclave in the name of media firm Media Exim using the bribe money. He was also reportedly in possession of a luxury car and a Fixed Deposit of ₹ 54 lakh. In September 2015, the adjudicating authority confirmed the attachment of properties and allowed the agency to retain the properties. In

September 2015, the ED attached assets worth about ₹ 7 crore alleged to be in the name of family members of ex-IAF Chief S. P. Tyagi.

The CBI and the ED have sent letters rogatory to as many as eight countries including Italy, Tunisia, Mauritius, the UAE, the UK, Switzerland, Singapore and the British Virgin Islands.

Joint Parliamentary Committee (JPC) investigation

On 27 February 2013, UPA-II Government introduced a motion in Rajya Sabha (the upper house of the Parliament of India) for an investigation led by a 30-member Joint Parliamentary Committee (JPC). The motion was passed after a walkout by most of the opposition parties like BJP, JD(U), Trinamool Congress, CPI, TDP and AGP. During the debate, Leader of the Opposition Arun Jaitley said the JPC was an "exercise in futility" and a "diversionary tactic."

He argued that the case involved various legal aspects such as extradition of accused foreigners and custodial interrogation and the JPC can have "none of these powers," leaving it ineffective. Many opposition members demanded Supreme Court-monitored investigation (on the similar lines of 2G spectrum case). Demands were also made to establish money trail and issue Letter Rogatory (LR).

The UPA government initially denied all allegations and claimed it has "nothing to hide" and that "our track record is not cover up."

Cancellation of the contract by the Indian Government

India cancelled the ₹ 3,600 crore deal with AgustaWestland in January 2014. The government cancelled the contract "on grounds of breach of the Pre-contract Integrity Pact and the agreement by AWIL (AgustaWestland International Ltd)". The contract was frozen in February 2013 after allegations surfaced that ₹3.6 billion (equivalent to ₹4.9 billion or US$69 million in 2019) was paid as a bribe.

Decision-makers

Senior officials involved in the decision-making process that led to the selection of the AgustaWestland helicopters for VVIP use were M. K. Narayanan (Indian Police Service (IPS), former Director Intelligence Bureau (India) and NSA); B V Wanchoo (IPS, and Chief of Special Protection Group); and Shashi Kant Sharma, IAS, and former defence secretary. After their tenures at the centre, the UPA Government made M.K. Narayanan governor of West Bengal, B.V. Wanchoo governor of Goa and Shashikant Sharma Comptroller and Auditor General of India.

CBI probe

The CBI approached Union Law Ministry to record statements of M. K. Narayanan and B. V. Wanchoo in January 2014. M.K Narayanan and B. V. Wanchoo were West Bengal and Goa Governors respectively at the time of CBI's request. Their statements were considered vital as they were National

Security Adviser and Special Protection Group (SPG) chief at the time of the signing of the contract with AgustaWestland. Their views were also considered before the Indian Government signed the contract with AgustaWestland. However, Kapil Sibal's Union Law ministry stonewalled the CBI probe by rejecting CBI's request to examine them under the usual excuse of "immunity." The CBI, therefore, approached President Pranab Mukherjee to seek permission to examine ex-NSA and ex-chief of SPG. M. K. Narayanan and B. V. Wanchoo were questioned by CBI later in June and July 2014 respectively.

Recovery of bank guarantee

After the cancellation of the contract, India encashed over ₹2.5 billion (US$35 million) made by AgustaWestland as a bank guarantee in the Indian banks in January 2014. Separately, India requested the Italian government to retrieve the bank guarantee amount made by the firm in Italian banks which was more than •275 million (₹ 23.64 billion). On 17 March 2014, a request made by India was rejected by an Italian court. However, the appellate court in Milan reversed the lower court's judgement and upheld the claims of the Indian government. Accordingly, in June 2014, the Indian government encashed ₹18.18 billion (US$250 million), taking the total amount recovered so far to ₹20.68 billion (US$290 million). With this, India was reported to have recovered the entire amount of around ₹16.2 billion (US$230 million) (45% of the total contract value ₹36 billion (US$500 million)) it had paid to AgustaWestland. However, it was later reported that AgustaWestland had not returned the entire amount, and kept •106 million for three helicopters it had delivered.

Italian Court judgments

The Italian court, investigating the case in October 2014, acquitted ex-IAF Chief S.P. Tyagi of all corruption charges. It also acquitted the former Finmeccanica CEO Giuseppe Orsi and former AgustaWestland head Bruno Spagnolini of "charges of international corruption". The court, however, convicted and sentenced them to two years in prison on the lesser charge of "false invoicing" in the case. On 8 April 2016, the Milan Court of Appeal, in a 225-page judgement, overturned the lower court verdict and sentenced Giuseppe Orsi to four years' imprisonment. Then, on 16 December 2016, the *Corte di Cassazione* (Supreme Court) cancelled the Appeals Court guilty verdict, and ordered a retrial, referring the matter to a different Court of Appeal, always in Milan. After nine months of proceedings, on 8 January 2018, the Milan Third Court of Appeals finally cleared the defendants and dismissed all charges, on grounds of insufficient evidence provided by the prosecution to support the allegations The verdict was upheld by the Supreme Court of Cassazione on 22 May 2019 after the Milan General Prosecutor's office failed to have a recourse supported by the Attorney General.

Chapter 27

Terror Attacks in Hyderabad in Dilsukhnagar Area

On 21 February 2013, at around 19:00 IST, two blasts occurred in the city of Hyderabad, India. The bombs exploded in Dilsukhnagar, a crowded shopping area, within 100 metres (330 ft) of each other.

The first explosion occurred outside a roadside eatery named A1 Mirchi, next to the Anand Tiffin Centre and opposite the Konark movie hall, followed by the second one two minutes later near the Route 107 bus stand close to the Venkatadri theatre.

Bombings

The first bomb went off at Anand Tiffins, located opposite Konark Theatre at around 19:02 IST (UTC+05:30). The second bomb went off at 19:06 IST between Venkatadri Theatre and Dilsukhnagar Bus Stand.

According to the Hyderabad Police, the bombs were placed on bicycles. Andhra Pradesh's Director General of Police noted that Improvised Explosive Devices (IEDs) had been used in the two blasts to cause maximum damage. The blasts killed 18 people, which included at least three college students and at least 119 injured.

Investigation

A team of forensic experts from the National Investigation Agency (NIA) and the National Security Guard (NSG) arrived in Hyderabad on a plane provided by the Border Security Force (BSF) for further investigation. Home Minister Sushilkumar Shinde claimed that the Indian government had intelligence about possible blasts, but the information wasn't specific enough to pinpoint the location of the blast site. Shinde also said that authorities had received intelligence about possible attacks in the country but no specific information as to where or when they might occur. CNN-IBN reported that an Indian Mujahideen operative named Maqbool confessed to carrying out reconnaissance of Dilsukhnagar in 2012 during interrogation by Delhi Police. Initial reports also suggested the involvement of Indian Mujahideen in the blasts.

On 22 February, two First Information Reports (FIR) were lodged probing the attack. One FIR was lodged at Cyberabads Saroor police station, while the second was lodged in Hyderabad. As the Hyderabad Police continued investigating in the serial blasts case, they detained six people for questioning. The NIA conducted raids at various places in Uttar Pradesh, Bihar and Maharashtra, looking for alleged terror modules. Forensic investigation revealed that the two bombs used were packed with huge amounts of iron nails and bolts and ammonium nitrate, which were held together with a copper string. Closed-circuit television footage collected from the traffic signal near the blast site revealed movements of five men who allegedly had planted explosives at the blast sites. However, the faces of the suspects were not clearly seen.

Police sources later said that a Sai Baba temple in the area was the initial target of the criminal activity. However, a visit by Hyderabad police commissioner Anurag Sharma eluded them and forced them to change their target. The Andhra Pradesh government claimed that it had obtained vital clues regarding the crime and would crack the case soon. Chief Minister Kiran Kumar Reddy sent out 15 special teams of Andhra Pradesh police, consisting of 10–15 personnel each. People lodged in the Chanchalguda Central Jail were also questioned regarding the blasts.

Response

Major cities in India like Mumbai, New Delhi and Bangalore, along with states like Gujarat, Maharashtra and West Bengal were put on high alert after the blasts. The police of Andhra Pradesh were confronted with massive traffic jams when they tried to implement relief and rescue operations. Home secretary R. K. Singh stated that officials from the National Investigation Agency were shifted from Delhi to Hyderabad.

Reactions

Domestic

President Pranab Mukherjee offered condolences to the bereaved families and condemned the blasts as "acts of cowardice". Prime Minister Manmohan Singh consoled the next of kin of those killed and seriously injured. The Chief Minister of Andhra Pradesh, Kiran Kumar Reddy, announced a compensation of ₹600,000 (US$8,400) to the next of kin of

those killed in the blasts and promised to bear the medical expenses of the injured. Home Minister Sushilkumar Shinde visited the blast site on the morning of 22 February and said that an investigation had been launched by a probe team appointed by the Andhra Pradesh government.

On the next day, speaking in the Lok Sabha, Leader of the opposition and senior Bharatiya Janata Party (BJP) leader Sushma Swaraj said political parties must fight non-state terror unitedly while calling out the central and Andhra Pradesh governments for their failure to prevent the twin explosions. "The nation needs to be united, the political parties need to get united. The moment that happens, we will be capable of fighting terror," She controversially linked the twin blasts with a provocative speech made earlier by Akbaruddin Owaisi stating "Do these blasts have a connection with the provocative speeches made by an honourable member of this house?" which Asaduddin Owaisi his brother described "unfortunate" and "irresponsible". The spokesperson for Bharatiya Janta Party Ravi Shankar Prasad said, "Several innocent lives have been lost in the Hyderabad blasts. The government should stop playing politics on the issue of terrorism. We want the government to take appropriate action. There should be better coordination between the Centre and the state governments. [..]This government should rise above vote-bank politics."

International **

- United Nations – United Nations Secretary-General Ban Ki-moon issued a statement that condemned the attack and offered his condolences to

the families of the victims. "The Secretary-General strongly condemns the indiscriminate attacks against civilians which occurred in the Indian city of Hyderabad."

- Australia – In a statement released through the Australian High Commission in New Delhi, Canberra said: "The government and people of Australia express their condolences and sympathy for victims of the bomb attacks in Hyderabad, India, on February 21. Australia condemns all acts of terrorism. These bombs appear to have been directed at innocent people, going about their daily business. Foreign Minister Bob Carr said he will be writing to India's Foreign Minister, Salman Khurshid, to express his support for India's efforts to prevent terrorist attacks," the statement added. "Our thoughts are with the families and friends of those killed or wounded," Senator Carr said.
- United States – The United States of America condemned the "cowardly attack" saying that it stood with India in battling the "scourge of terrorism" and offered its assistance in probing the incident. Secretary of State John Kerry personally expressed condolences at the loss of lives and condemned the attack on behalf of his country. In Kerry's first *Twitter* posting as secretary of state he wrote: "Saw friend/Foreign Secretary Mathai- discussed importance of relationship w/ #India, expressed sympathies to brave people of #Hyderabad -JK." State Department spokesperson Victoria Nuland stated "We condemn the cowardly attack in Hyderabad, India, in the strongest possible terms,

and we extend our deepest sympathies to those affected and to the people of India."

- France – France condemned "in the strongest terms" the twin bombing in Hyderabad and said India can count on Paris' "steadfast support and cooperation" in the fight against terrorism. Conveying his heartfelt condolences to the victims' families on behalf of France, François Hollande, President of France expressed "his complete solidarity with the Indian people and the government in the fight against terrorism, for which they can count on France's steadfast support and cooperation".
- Pakistan – Foreign Ministry spokesman Moazzam Khan said: "Pakistan strongly condemns the bomb blasts in Hyderabad causing several deaths and injuries."
- Turkey – The Ministry of Foreign Affairs issued a statement that read: "We condemn this terrorist attack which killed innocent people. We wish God's mercy upon those who lost their lives, convey our condolences to their bereaved families and wish a speedy recovery to those wounded".

Dilsukhnagar

Dilsukhnagar is one of the largest commercial and residential centers in Hyderabad. It was once part of the Municipal Corporation of Hyderabad, but later merged with the Greater Hyderabad Municipal Corporation.

History

The name "Dilsukhnagar" is derived from Dilsukh Ramprasad, an agricultural land owner who lived around Malakpet. It is said that he subdivided his land into plots and built a colony which he named Dilsukhnagar.

Dilsukhnagar was once a purely residential suburb; however, in the last decade strong economic growth has transformed it into a major commercial hub.

Administration

Dilsukhnagar was merged into the Greater Hyderabad Municipal Corporation in 2007 after an order passed by the Government of Telangana. It is now a part of the Telangana State Assembly.

Transport

The suburb houses a Telangana State Road Transport Corporation bus depot.

Multi-Modal Transport System station in Malakpet serves Dilsukhnagar. It is well connected by Hyderabad Metro

Incidents

The locality has been subject to terrorist attacks twice in its history. Both cases involved attacks using a time bomb. The first incident happened in 2002, allegedly planted by SIMI,

investigation of which is underway. The second incident involving twin blasts occurred in 2013, killing 13 people while injuring 83 others. Death toll enhanced to 17 in the ensuing days. Members of Indian Mujahideen, a terrorist group, were eventually convicted for their role in the blasts.

Chapter 28

Mars Orbiter Mission

The **Mars Orbiter Mission** (**MOM**), also called ***Mangalyaan*** ("Mars-craft", from *mangala*, "Mars" and *yāna*, "craft, vehicle"), is a space probe orbiting Mars since 24 September 2014. It was launched on 5 November 2013 by the Indian Space Research Organisation (ISRO). It is India's first interplanetary mission and it made it the fourth space agency to achieve Mars orbit, after Roscosmos, NASA, and the European Space Agency. It made India the first Asian nation to reach Martian orbit and the first nation in the world to do so on its maiden attempt.

The Mars Orbiter Mission probe lifted-off from the First Launch Pad at Satish Dhawan Space Centre (Sriharikota Range SHAR), Andhra Pradesh, using a Polar Satellite Launch Vehicle (PSLV) rocket C25 at 09:08 UTC on 5 November 2013. The launch window was approximately 20 days long and started on 28 October 2013.

The MOM probe spent about a month in Earth orbit, where it made a series of seven apogee-raising orbital manoeuvres before trans-Mars injection on 30 November 2013 (UTC). After a 298-day transit to Mars, it was put into Mars orbit on 24 September 2014.

The mission is a "technology demonstrator" project to develop the technologies for designing, planning, management, and operations of an interplanetary mission. It carries five scientific instruments. The spacecraft is currently being

monitored from the Spacecraft Control Centre at ISRO Telemetry, Tracking and Command Network (ISTRAC) in Bengaluru with support from the Indian Deep Space Network (IDSN) antennae at Bengaluru, Karnataka.

History

On 23 November 2008, the first public acknowledgement of an uncrewed mission to Mars was announced by then-ISRO chairman G. Madhavan Nair. The MOM mission concept began with a feasibility study in 2010 by the Indian Institute of Space Science and Technology after the launch of lunar satellite Chandrayaan-1 in 2008. Prime Minister Manmohan Singh approved the project on 3 August 2012, after the Indian Space Research Organisation completed ₹125 crore (US$18 million) of required studies for the orbiter. The total project cost may be up to ₹454 crore (US$64 million). The satellite costs ₹153 crore (US$21 million) and the rest of the budget has been attributed to ground stations and relay upgrades that will be used for other ISRO projects.

The space agency had planned the launch on 28 October 2013 but was postponed to 5 November following the delay in ISRO's spacecraft tracking ships to take up pre-determined positions due to poor weather in the Pacific Ocean. Launch opportunities for a fuel-saving Hohmann transfer orbit occur every 26 months, in this case the next two would be in 2016 and 2018.

Assembly of the PSLV-XL launch vehicle, designated C25, started on 5 August 2013. The mounting of the five scientific instruments was completed at Indian Space Research Organisation Satellite Centre, Bengaluru, and the finished

spacecraft was shipped to Sriharikota on 2 October 2013 for integration to the PSLV-XL launch vehicle. The satellite's development was fast-tracked and completed in a record 15 months, partly due to using reconfigured Chandrayaan-2 orbiter bus. Despite the US federal government shutdown, NASA reaffirmed on 5 October 2013 it would provide communications and navigation support to the mission "with their Deep Space Network facilities.". During a meeting on 30 September 2014, NASA and ISRO officials signed an agreement to establish a pathway for future joint missions to explore Mars.

One of the working group's objectives will be to explore potential coordinated observations and science analysis between the MAVEN orbiter and MOM, as well as other current and future Mars missions.

Team

Some of the scientists and engineers involved in the mission include:

- K Radhakrishnan led as Chairman ISRO.
- Mylswamy Annadurai was the Programme Director and in charge of budget management as well as direction for spacecraft configuration, schedule and resources.
- S Ramakrishnan was a Director who helped in developing the liquid propulsion system of the PSLV launcher.

- P. Kunhikrishnan was a Project Director in the PSLV programme. He was also a Mission director of PSLV-C25/Mars Orbiter Mission.
- Moumita Dutta was the Project manager of the Mars Orbiter Mission.
- Nandini Harinath was the Deputy Operations Director of Navigation.
- Ritu Karidhal was the Deputy Operations Director of Navigation.
- BS Kiran was the Associate Project Director of Flight Dynamics.
- V Kesava Raju was the Mars Orbiter Mission Director.
- V Koteswara Rao was ISRO scientific secretary.
- Chandradathan was the Director of the Liquid Propulsion System.
- A. S. Kiran Kumar was the Director of the Satellite Application Centre.
- MYS Prasad is the Director at Satish Dhawan Space Centre. He was also the chairman at Launch Authorisation Board.
- SK Shivakumar was a Director at the ISRO Satellite Centre. He was also a Project Director for the Deep Space Network.
- Subbiah Arunan was a Project Director at Mars Orbiter Mission.
- B Jayakumar was an Associate Project Director at the PSLV programme who was responsible for testing the rocket systems.
- MS Pannirselvam was the Chief General Manager at the Sriharikota Rocket port and was tasked to maintain launch schedules.

Cost

The total cost of the mission was approximately ₹450 Crore (US$73 million), making it the least-expensive Mars mission to date. The low cost of the mission was ascribed by K. Radhakrishnan, the chairman of ISRO, to various factors, including a "modular approach", few ground tests and long (18–20 hour) working days for scientists. BBC's Jonathan Amos mentioned lower worker costs, home-grown technologies, simpler design, and a significantly less complicated payload than NASA's MAVEN.

Mission objectives

The primary objective of the mission is to develop the technologies required for designing, planning, management and operations of an interplanetary mission. The secondary objective is to explore Mars' surface features, morphology, mineralogy and Martian atmosphere using indigenous scientific instruments.

The main objectives are to develop the technologies required for designing, planning, management and operations of an interplanetary mission comprising the following major tasks:

- Orbit manoeuvres to transfer the spacecraft from Earth-centred orbit to heliocentric trajectory and finally, capture into Martian orbit
- Development of force models and algorithms for orbit and attitude (orientation) computations and analysis
- Navigation in all phases

- Maintain the spacecraft in all phases of the mission
- Meeting power, communications, thermal and payload operation requirements
- Incorporate autonomous features to handle contingency situations

Scientific objectives

The scientific objectives deal with the following major aspects:

- Exploration of Mars surface features by studying the morphology, topography and mineralogy
- Study the constituents of Martian atmosphere including methane and CO_2 using remote sensing techniques
- Study the dynamics of the upper atmosphere of Mars, effects of solar wind and radiation and the escape of volatiles to outer space

The mission would also provide multiple opportunities to observe the Martian moon Phobos and also offer an opportunity to identify and re-estimate the orbits of asteroids seen during the Martian Transfer Trajectory.

Spacecraft design

- **Mass**: The lift-off mass was 1,337.2 kg (2,948 lb), including 852 kg (1,878 lb) of propellant.
- **Bus**: The spacecraft's bus is a modified I-1 K structure and propulsion hardware configuration, similar to Chandrayaan-1, India's lunar orbiter that operated from 2008 to 2009, with specific

improvements and upgrades needed for a Mars mission. The satellite structure is constructed of an aluminium and composite fibre reinforced plastic (CFRP) sandwich construction.

- **Power**: Electric power is generated by three solar array panels of 1.8 m × 1.4 m (5 ft 11 in × 4 ft 7 in) each (7.56 m (81.4 sq ft) total), for a maximum of 840 watts of power generation in Mars orbit. Electricity is stored in a 36 Ah Lithium-ion battery.
- **Propulsion**: A liquid fuel engine with a thrust of 440 newtons (99 lb_f) is used for orbit raising and insertion into Mars orbit. The orbiter also has eight 22-newton (4.9 lb_f) thrusters for attitude control (orientation). Its propellant mass at launch was 852 kg (1,878 lb).
- **Attitude and Orbit Control System**: Maneuvering system that includes electronics with a MAR31750 processor, two star sensors, a solar panel Sun sensor, a coarse analog Sun sensor, four reaction wheels, and the primary propulsion system.
- **Antennae**: Low gain antenna, mid gain antenna, and high gain antenna

Payload

The 15 kg (33 lb) scientific payload consists of five instruments:

- **Atmospheric studies:**
- Lyman-Alpha Photometer (LAP) – a photometer that measures the relative abundance of deuterium and hydrogen from Lyman-alpha emissions in the upper

atmosphere. Measuring the deuterium/hydrogen ratio will allow an estimation of the amount of water loss to outer space. The nominal plan to operate LAP is between the ranges of approximately 3,000 km (1,900 mi) before and after Mars periapsis. Minimum observation duration for achieving LAP's science goals is 60 minutes per orbit during normal range of operation. The objectives of this instrument are as follows:

- Estimation of D/H ratio
- Estimation of escape flux of H2 corona
- Generation of hydrogen and deuterium coronal profiles.
- Methane Sensor for Mars (MSM) – was meant to measure methane in the atmosphere of Mars, if any, and map its sources with an accuracy of parts-per-billion (ppb). After entering Mars orbit it was determined that the instrument, although in good working condition, had a design flaw and it was not capable of detecting methane. The instrument was repurposed as an albedo mapper.
- **Particle environment studies:**
- Mars Exospheric Neutral Composition Analyser (MENCA) – is a quadrupole mass analyser capable of analysing the neutral composition of particles in the range of 1–300 amu (atomic mass unit) with unit mass resolution. The heritage of this payload is from Chandra's Altitudinal Composition Explorer (CHACE) payload aboard the Moon Impact Probe (MIP) in Chandrayaan-1 mission. MENCA is planned to perform five observations per orbit with one hour per observation.

- **Surface imaging studies:**
- Thermal Infrared Imaging Spectrometer (TIS) – TIS measures the thermal emission and can be operated during both day and night. It would map surface composition and mineralogy of Mars and also monitor atmospheric CO_2 and turbidity (required for the correction of MSM data). Temperature and emissivity are the two basic physical parameters estimated from thermal emission measurement. Many minerals and soil types have characteristic spectra in TIR region. TIS can map surface composition and mineralogy of Mars.
- Mars Colour Camera (MCC) – This tricolour camera gives images and information about the surface features and composition of Martian surface. It is useful to monitor the dynamic events and weather of Mars like dust storms/atmospheric turbidity. MCC will also be used for probing the two satellites of Mars, Phobos and Deimos. MCC would provide context information for other science payloads. MCC images are to be acquired whenever MSM and TIS data is acquired. Seven Apoareion Imaging of the entire disc and multiple Periareion images of 540 km × 540 km (340 mi × 340 mi) are planned in every orbit.

Telemetry and command

The ISRO Telemetry, Tracking and Command Network performed navigation and tracking operations for the launch with ground stations at Sriharikota, Port Blair, Brunei and Biak in Indonesia, and after the spacecraft's apogee became

more than 100,000 km, an 18 m (59 ft) and a 32 m (105 ft) diameter antenna of the Indian Deep Space Network were utilised. The 18 m (59 ft) dish antenna was used for communication with the craft until April 2014, after which the larger 32 m (105 ft) antenna was used. NASA's Deep Space Network is providing position data through its three stations located in Canberra, Madrid and Goldstone on the US West Coast during the non-visible period of ISRO's network. The South African National Space Agency's (SANSA) Hartebeesthoek (HBK) ground station is also providing satellite tracking, telemetry and command services.

Communications

Communications are handled by two 230-watt TWTAs and two coherent transponders. The antenna array consists of a low-gain antenna, a medium-gain antenna and a high-gain antenna. The high-gain antenna system is based on a single 2.2-metre (7 ft 3 in) reflector illuminated by a feed at S-band. It is used to transmit and receive the telemetry, tracking, commanding and data to and from the Indian Deep Space Network.

Launch

ISRO originally intended to launch MOM with its Geosynchronous Satellite Launch Vehicle (GSLV), but the GSLV failed twice in 2010 and still had issues with its cryogenic engine. Waiting for the new batch of rockets would have delayed the MOM for at least three years, so ISRO opted to switch to the less-powerful Polar Satellite Launch Vehicle (PSLV). Since it was not powerful enough to place MOM on a

direct-to-Mars trajectory, the spacecraft was launched into a highly elliptical Earth orbit and used its own thrusters over multiple perigee burns (to take advantage of the Oberth effect) to place itself on a trans-Mars trajectory.

On 19 October 2013, ISRO chairman K. Radhakrishnan announced that the launch had to be postponed by a week for 5 November 2013 due to a delay of a crucial telemetry ship reaching Fiji. The launch was rescheduled ISRO's PSLV-XL placed the satellite into Earth orbit at 09:50 UTC on 5 November 2013, with a perigee of 264.1 km (164.1 mi), an apogee of 23,903.6 km (14,853.0 mi), and inclination of 19.20 degrees, with both the antenna and all three sections of the solar panel arrays deployed. During the first three orbit raising operations, ISRO progressively tested the spacecraft systems.

The orbiter's dry mass is 475 kg (1,047 lb) and it carried 852 kg (1,878 lb) of fuel at launch. Its main engine, a derivative of the system used on India's communications satellites, uses the bipropellant combination monomethylhydrazine and dinitrogen tetroxide to achieve the thrust necessary for escape velocity from Earth. It was also used to slow down the probe for Mars orbit insertion and, subsequently, for orbit corrections.

Orbit raising manoeuvres

Several orbit raising operations were conducted from the Spacecraft Control Centre (SCC) at the ISRO Telemetry, Tracking and Command Network (ISTRAC) at Peenya, Bengaluru on 6, 7, 8, 10, 12 and 16 November by using the spacecraft's on-board propulsion system and a series of perigee

burns. The first three of the five planned orbit raising manoeuvres were completed with nominal results, while the fourth was only partially successful. However, a subsequent supplementary manoeuvre raised the orbit to the intended altitude aimed for in the original fourth manoeuvre. A total of six burns were completed while the spacecraft remained in Earth orbit, with a seventh burn conducted on 30 November to insert MOM into a heliocentric orbit for its transit to Mars.

The first orbit-raising manoeuvre was performed on 6 November 2013 at 19:47 UTC when the spacecraft's 440-newton (99 lb_f) liquid engine was fired for 416 seconds. With this engine firing, the spacecraft's apogee was raised to 28,825 km (17,911 mi), with a perigee of 252 km (157 mi).

The second orbit raising manoeuvre was performed on 7 November 2013 at 20:48 UTC, with a burn time of 570.6 seconds resulting in an apogee of 40,186 km (24,970 mi).

The third orbit raising manoeuvre was performed on 8 November 2013 at 20:40 UTC, with a burn time of 707 seconds, resulting in an apogee of 71,636 km (44,513 mi).

The fourth orbit raising manoeuvre, starting at 20:36 UTC on 10 November 2013, imparted a delta-v of 35 m/s (110 ft/s) to the spacecraft instead of the planned 135 m/s (440 ft/s) as a result of underburn by the motor. Because of this, the apogee was boosted to 78,276 km (48,638 mi) instead of the planned 100,000 km (62,000 mi). When testing the redundancies built-in for the propulsion system, the flow to the liquid engine stopped, with consequent reduction in incremental velocity. During the fourth orbit burn, the primary and redundant coils of the solenoid flow control valve of 440 newton liquid engine

and logic for thrust augmentation by the attitude control thrusters were being tested. When both primary and redundant coils were energised together during the planned modes, the flow to the liquid engine stopped. Operating both the coils simultaneously is not possible for future operations, however they could be operated independently of each other, in sequence.

As a result of the fourth planned burn coming up short, an additional unscheduled burn was performed on 12 November 2013 that increased the apogee to 118,642 km (73,721 mi), a slightly higher altitude than originally intended in the fourth manoeuvre. The apogee was raised to 192,874 km (119,846 mi) on 15 November 2013, 19:57 UTC in the final orbit raising manoeuvre.

Trans-Mars injection

On 30 November 2013 at 19:19 UTC, a 23-minute engine firing initiated the transfer of MOM away from Earth orbit and on heliocentric orbit toward Mars. The probe travelled a distance of 780,000,000 kilometres (480,000,000 mi) to reach Mars.

Trajectory correction maneuvers

Four trajectory corrections were originally planned, but only three were carried out. The first trajectory correction manoeuvre (TCM) was carried out on 11 December 2013 at 01:00 UTC by firing the 22-newton (4.9 lb_f) thrusters for a duration of 40.5 seconds. After this event, MOM was following the designed trajectory so closely that the trajectory correction manoeuvre planned in April 2014 was not required. The second

trajectory correction manoeuvre was performed on 11 June 2014 at 11:00 UTC by firing the spacecraft's 22 newton thrusters for 16 seconds. The third planned trajectory correction manoeuvre was postponed, due to the orbiter's trajectory closely matching the planned trajectory. The third trajectory correction was also a deceleration test 3.9 seconds long on 22 September 2014.

Status

The orbit insertion put MOM in a highly elliptical orbit around Mars, as planned, with a period of 72 hours 51 minutes 51 seconds, a periapsis of 421.7 km (262.0 mi) and apoapsis of 76,993.6 km (47,841.6 mi). At the end of the orbit insertion, MOM was left with 40 kg (88 lb) of fuel on board, more than the 20 kg (44 lb) necessary for a six-month mission.

On 28 September 2014, MOM controllers published the spacecraft's first global view of Mars. The image was captured by the Mars Colour Camera (MCC).

On 7 October 2014, the ISRO altered MOM's orbit so as to move it behind Mars for Comet Siding Spring's flyby of the planet on 19 October 2014. The spacecraft consumed 1.9 kg (4 lb) of fuel for the manoeuvre. As a result, MOM's apoapsis was reduced to 72,000 km (45,000 mi). After the comet passed by Mars, ISRO reported that MOM remained healthy.

On 4 March 2015, the ISRO reported that the MSM instrument was functioning normally and are studying Mars' albedo, the reflectivity of the planet's surface. The Mars Colour Camera was also returning new images of the Martian surface.

On 24 March 2015, MOM completed its initial six-month mission in orbit around Mars. ISRO extended the mission by an additional six months; the spacecraft has 37 kg (82 lb) of propellant remaining and all five of its scientific instruments are working properly. The orbiter can reportedly continue orbiting Mars for several years with its remaining propellant.

A 17-day communications blackout occurred from 6 to 22 June 2015 while Mars' orbit took it behind the Sun from Earth's view.

On 24 September 2015, ISRO released its "Mars Atlas", a 120-page scientific atlas containing images and data from the Mars Orbiter Mission's first year in orbit.

In March 2016, the first science results of the mission were published in *Geophysical Research Letters*, presenting measurements obtained by the spacecraft's MENCA instrument of the Martian exosphere.

During 18 to 30 May 2016, a communication whiteout occurred with Earth coming directly between Sun and Mars. Due to high solar radiation, sending commands to spacecraft was avoided and payload operations were suspended.

On 17 January 2017, MOM's orbit was altered to avoid the impending eclipse season. With a burn of eight 22 N thrusters for 431 seconds, resulting in a velocity difference of 97.5 metres per second (351 km/h) using 20 kilograms (44 lb) of propellant (leaving 13 kg remaining), eclipses were avoided until September 2017. The battery is able to handle eclipses of up to 100 minutes.

On 19 May 2017, MOM reached 1,000 days (973 sols) in orbit around Mars. In that time, the spacecraft completed 388 orbits of the planet and relayed more than 715 images back to Earth. ISRO officials stated that it remains in good health.

On 24 September 2018, MOM completed 4 years in its orbit around Mars, although the designed mission life was only six months. Over these years, MOM's Mars Colour Camera has captured over 980 images that were released to the public. The probe is still in good health and continues to work nominally.

On 24 September 2019, MOM completed 5 years in orbit around Mars, sending 2 terabytes of imaging data, and had enough propellant to complete another year in orbit.

On 1 July 2020, Mangalyaan was able to capture a photo of the Mars satellite Phobos from 4200 km away.

On 24 September 2020, MOM completed 6 years in orbit around Mars.

Recognition

In 2014, China referred to India's successful Mars Orbiter Mission as the "Pride of Asia". The Mars Orbiter Mission team won US-based National Space Society's 2015 Space Pioneer Award in the science and engineering category.

NSS said the award was given as the Indian agency successfully executed a Mars mission in its first attempt; and the spacecraft is in an elliptical orbit with a high apoapsis where, with its high resolution camera, it is taking full-disk colour imagery of Mars. Very few full disk images have ever

been taken in the past, mostly on approach to the planet, as most imaging is done looking straight down in mapping mode. These images will aid planetary scientists.

An illustration of the Mars Orbiter Mission spacecraft is featured on the reverse of the ₹2,000 currency note of India.

An image taken by the Mars Orbiter Mission spacecraft was the cover photo of the November 2016 issue of *National Geographic* magazine, for their story "Mars: Race to the Red Planet".

Follow-up mission

ISRO plans to develop and launch a follow-up mission called Mars Orbiter Mission 2 (MOM-2 or *Mangalyaan-2*) with a greater scientific payload to Mars in 2024.

The orbiter will use aerobraking to reduce apoapsis of its initial orbit and reach an altitude more suitable for scientific observation.

In popular culture

- The 2019 Hindi film *Mission Mangal* is loosely based on India's mission to Mars.
- A web series called *Mission Over Mars* is loosely based on India's Mars mission.
- *Space MOMs* released online in 2019 is based India's Mars Mission.
- *Mission Mars* released in 2018 is a short Film based on India's Mars Mission.

Chapter 29

Indian Space Research Organisation

- The **Indian Space Research Organisation** or is the national space agency of India, headquartered in Bengaluru. It operates under Department of Space (DOS) which is directly overseen by the Prime Minister of India, while Chairman of ISRO acts as executive of DOS as well. ISRO is the primary agency in India to perform tasks related to space based applications, space exploration and development of related technologies. It is one of six government space agencies in the world which possess full launch capabilities, deploy cryogenic engines, launch extraterrestrial missions and operate large fleets of artificial satellites.

The Indian National Committee for Space Research (INCOSPAR) was established by Jawaharlal Nehru under the Department of Atomic Energy (DAE) in 1962, on the urging of scientist Vikram Sarabhai recognising the need in space research. INCOSPAR grew and became ISRO in 1969, within DAE. In 1972, the Government of India had set up a Space Commission and the Department of Space (DOS), bringing ISRO under the DOS. The establishment of ISRO thus institutionalised space research activities in India. It since then has been managed by the DOS, which governs various other institutions in India in domain of astronomy and space technology.

ISRO built India's first satellite, Aryabhata, which was launched by the Soviet Union on 19 April 1975. In 1980, ISRO launched satellite RS-1 onboard its own SLV-3 making India the sixth country to be capable of undertaking orbital launches. SLV-3 was followed by ASLV which was subsequently succeeded by development of many medium-lift launch vehicles, rocket engines, satellite systems and networks enabling agency to launch hundreds of domestic and foreign satellites and various deep space missions for space exploration.

ISRO was the world's first space agency to find water on the moon and insert a probe in orbit of Mars in its maiden attempt. It has the world's largest constellation of remote-sensing satellites and operates two satellite navigation systems namely GAGAN and NAVIC.

Goals in near future include expanding satellites fleet, landing a rover on Moon, sending humans into space, development of a semi-cryogenic engine, sending more unmanned missions to moon, Mars, Venus and Sun and deployment of more space telescopes in orbit to observe consmic phenomena and outerspace beyond solar system. Long term plans include development of reusable launchers, heavy and super heavy launch vehicles, deploying a space station, sending exploration missions to external planets like Jupiter, Uranus, Neptune and asteroids and manned missions to Moon and planets.

ISRO's programs have played a significant role in the socio-economic development of India and have supported both civilian and military domains in various aspects including disaster management, telemedicine and navigation and

reconnaissance missions. ISRO's spin off technologies also have founded many crucial innovations for India's engineering and medical industries.

History

Formative years

Modern space research in India is traced to the 1920s, when scientist S. K. Mitra conducted a series of experiments leading to the sounding of the ionosphere by applying ground-based radio methods in Kolkata. Later, Indian scientists like C.V. Raman and Meghnad Saha contributed to scientific principles applicable in space sciences. However, it was the period after 1945 that saw important developments being made in coordinated space research in India. Organised space research in India was spearheaded by two scientists: Vikram Sarabhai—founder of the Physical Research Laboratory at Ahmedabad—and Homi Bhabha, who established the Tata Institute of Fundamental Research in 1945. Initial experiments in space sciences included the study of cosmic radiation, high altitude and airborne testing, deep underground experimentation at the Kolar mines—one of the deepest mining sites in the world—and studies of the upper atmosphere. Studies were carried out at research laboratories, universities, and independent locations.

In 1950, the Department of Atomic Energy was founded with Bhabha as its secretary. The department provided funding for space research throughout India. During this time, tests continued on aspects of meteorology and the Earth's magnetic field, a topic that was being studied in India since the establishment of the observatory at Colaba in 1823. In 1954,

the Uttar Pradesh state observatory was established at the foothills of the Himalayas. The Rangpur Observatory was set up in 1957 at Osmania University, Hyderabad. Space research was further encouraged by the government of India. In 1957, the Soviet Union launched Sputnik 1 and opened up possibilities for the rest of the world to conduct a space launch.

The Indian National Committee for Space Research (INCOSPAR) was set up in 1962 by PM Nehru on the urging of Vikram Sarabhai. There was no dedicated ministry for space program initially and all activities of INCOSPAR relating to space technology continued to function within DAE. H.G.S. Murthy was appointed as the first Director of Thumba Equatorial Rocket Launching Station. Sounding rockets from Thumba Equatorial Rocket Launching Station were fired marking the start of upper atmospheric research in India. Indigenous series of sounding rockets named Rohini was subsequently developed and started undergoing launches from 1967 onwards.

1970s and 1980s

Under the administration of Indira Gandhi, INCOSPAR was superseded by ISRO. Later in 1972, a space commission and Department of Space (DOS) were set up to overview space technology development in India specifically and ISRO was brought under DOS, institutionalising space research in India and forging Indian space program into its existing form.

India joined the Soviet Interkosmos program for space cooperation and got its first satellite Aryabhatta in orbit through a Soviet rocket.

Efforts to develop an orbital launch vehicle begun after mastering sounding rocket technology. Concept was to develop a launcher capable of providing sufficient velocity to a mass of 35 kg (77 lb) to enter LEO. It took 7 years for ISRO to develop Satellite Launch Vehicle capable of putting 40 kg (88 lb) into a 400 km (250 mi) orbit.

SLV Launch Pad, ground stations, tracking networks, radars and other communications were set up for launch campaign. Its first launch in 1979 carried a Rohini technology payload but couldn't inject satellite into its desired orbit. It was followed by a successful launch in 1980 carrying Rohini Series-I satellite making India the seventh country to reach earth's orbit after USSR, USA, France, United Kingdom, China and Japan. RS-1 was third Indian satellite to reach orbit as Bhaskara had been launched from USSR in 1979. Efforts to develop a medium-lift launch vehicle capable of putting 600 kg (1,300 lb) class spacecrafts into 1000 km sun-synchronous orbit had already begun in 1978 which would later lead to development of PSLV. SLV-3 later had two more launches before discontinual in 1983. ISRO's Liquid Propulsion Systems Centre (LPSC) was set up in 1985 and started working on a more powerful engine Vikas based upon French Viking. In 1987, facilities to test liquid fueled rocket engines was established and development and testing of various rocket engines thrusters began.

Parallelly, another solid fueled rocket Augmented Satellite Launch Vehicle based upon SLV-3 was being developed technologies to launch satellites into geostationary orbit. ASLV had limited success and multiple launch failures was discontinued soon. Alongside, technologies for Indian National

Satellite System for communication satellites and Indian Remote Sensing Programme for earth observation satellites were developed and launches from overseas initiated. Number of satellites eventually expanded and systems were established as among largest satellite constellations in the world with a number of multi-band communication, radar imaging, optical imaging and meteorological satellites.

1990s and early 21st century

Arrival of PSLV in 1990s became a major boost for Indian space program. With the exception of its first flight in 1994 and two partial failures later, PSLV had a streak of more than 50 successful flights. PSLV enabled India to launch all of its LEO satellites, small payloads to GTO and hundreds of foreign satellites. Along with the flights of PSLV, development of a new rocket namely Geosynchronous Satellite Launch Vehicle (GSLV) was going on.

India tried to obtain upper-stage cryogenic engines from Russian Glavkosmos but was blocked by United States from doing so. As a result, KVD-1 engines were imported from Russia under new agreement which had limited success and a project to develop indigenous cryogenic technology was launched in 1994, which took two decades to mature. A new agreement was signed with Russia for 7 KVD-1 cryogenic stages and 1 ground mock-up stage with no technology transfer, instead of 5 cryogenic stages along with the technology and design as per the earlier agreement. These engines were used for the initial flights and were named GSLV Mk.1. ISRO was under US government sanctions between 6 May 1992 to 6 May 1994.

After US refused to help India with Global Positioning System (GPS) during Kargil war, ISRO was induced to develop its own satellite navigation system IRNSS which is now expanding further.

In 2003, when China sent humans into space, prime minister Atal Bihari Vajpayee urged scientists to develop technologies to land humans on Moon and Indian programs to send missions to Moon, other planets and sending humans to space came into existence soon. ISRO launched Chandrayaan-1 in 2008, which was world's first probe to verify the presence of water on the Moon and Mars Orbiter Mission in 2013 which was first Asian spacecraft to enter Martian orbit and India being first country to do so in maiden attempt.

Subsequently, cryogenic upper stage for GSLV rocket operationalised making India sixth country to have full launch capabilities and a new heavier-lift launcher GSLV Mk III was introduced in 2014 for heavier satellites and enabling human space missions. Since then, development of bigger rockets, more advanced satellites and spacecrafts has been going on.

Agency logo

ISRO did not have an official logo unlike other space agencies until 2002. The adopted logo is consisted of an orange aero shooting upwards attached with two blue colored satellite panels with the name of ISRO written in two sets of text. One in orange color in Devanagari on left side and another in blue color in English in Prakrta font.

Goals and objectives

ISRO is the national space agency of India for the purpose of all space-based applications like reconnaissance & communications and doing research. It undertakes the design and development of space rockets, satellites, explores upper atmosphere and deep space exploration missions. ISRO also has incubated its technologies in India's private space sector boosting its growth. The Indian space programme was founded and pushed ahead by the vision of Vikram Sarabhai, considered the father of the Indian space programme. As he said in 1969:

There are some who question the relevance of space activities in a developing nation. To us, there is no ambiguity of purpose. We do not have the fantasy of competing with the economically advanced nations in the exploration of the Moon or the planets or manned space-flight. But we are convinced that if we are to play a meaningful role nationally, and in the community of nations, we must be second to none in the application of advanced technologies to the real problems of man and society, which we find in our country. And we should note that the application of sophisticated technologies and methods of analysis to our problems is not to be confused with embarking on grandiose schemes, whose primary impact is for show rather than for progress measured in hard economic and social terms.

- — *Vikram Sarabhai*

Former president of India, A. P. J. Abdul Kalam, said:

Very many individuals with myopic vision questioned the relevance of space activities in a newly independent nation which was finding it difficult to feed its population. But neither Prime Minister Nehru nor Prof. Sarabhai had any ambiguity of purpose. Their vision was very clear: if Indians were to play a meaningful role in the community of nations, they must be second to none in the application of advanced technologies to their real-life problems. They had no intention of using it merely as a means of displaying our might.

- *— A. P. J. Abdul Kalam*

India's economic progress has made its space programme more visible and active as the country aims for greater self-reliance in space technology. In 2008, India launched as many as eleven satellites, including nine foreign and went on to become the first nation to launch ten satellites on one rocket. ISRO has put into operation two major satellite systems: the Indian National Satellites (INSAT) for communication services, and the Indian Remote Sensing Programme (IRS) satellites for management of natural resources.

Organisation structure and facilities

ISRO is managed by the Department of Space (DoS) of the Government of India. DoS itself falls under the authority of the Space Commission and manages the following agencies and institutes:

- Indian Space Research Organisation
- Antrix Corporation – The marketing arm of ISRO, Bangalore

- Physical Research Laboratory (PRL), Ahmedabad
- National Atmospheric Research Laboratory (NARL), Gadanki, Andhra Pradesh
- NewSpace India Limited - Commercial wing, Bangalore
- North-Eastern Space Applications Centre (NE-SAC), Umiam
- Semi-Conductor Laboratory (SCL), Mohali
- Indian Institute of Space Science and Technology (IIST), Thiruvananthapuram – India's space university

Antrix Corporation Limited (Commercial Wing)

Set up as the marketing arm of ISRO, Antrix's job is to promote products, services and technology developed by ISRO.

NewSpace India Limited (Commercial Wing)

Set up for marketing spin-off technologies, tech transfers through industry interface and scale up industry participation in the space programmes.

Space Technology Incubation Centre

ISRO has opened Space Technology Incubation Centres (S-TIC) at premier technical universities in India which will incubate startups to build applications and products in tandem with the industry and would be used for future space missions. The S-TIC will bring the industry, academia and ISRO under one umbrella to contribute towards research and development (R&D) initiatives relevant to the Indian Space Programme. S-

TICs are at the National Institute of Technology, Agartala serving for east region, National Institute of Technology, Jalandhar for the north region, and the National Institute of Technology, Tiruchirappalli for the south region of India.

Advance Space Research Group

Like NASA funded Jet Propulsion Laboratory (JPL) managed by California Institute of Technology (Caltech), ISRO with Indian Institute of Space Science and Technology (IIST) implemented a joint working framework in 2021 in which an Empowered Overseeing Committee (EOC) under Capacity Building Programme Office (CBPO) of ISRO located in Bengaluru will approve all short, medium and long term space research projects of common interest. In return, an Advance Space Research Group (ASRG) formed at IIST under the guidance of EOC will have full access to ISRO facilities. The primary aim is to transform IIST into a premier space research and engineering institute by 2028-2030 that can lead future space exploration missions of ISRO.

Other facilities

- Balasore Rocket Launching Station (BRLS) – Odisha
- Human Space Flight Centre (HSFC), Bangalore
- Indian National Committee for Space Research (INCOSPAR)
- Indian Regional Navigational Satellite System (IRNSS)
- Indian Space Science Data Centre (ISSDC)
- Integrated Space Cell

- Inter University Centre for Astronomy and Astrophysics (IUCAA)
- ISRO Inertial Systems Unit (IISU) – Thiruvananthapuram
- Master Control Facility
- National Deep Space Observation Centre (NDSPO)
- Regional Remote Sensing Service Centres (RRSSC)

General satellite programmes

Since the launch of Aryabhata in 1975, a number of satellite series and constellations have been deployed by Indian and foreign launchers. At present, ISRO operates one of the largest constellations of active communication and earth imaging satellites for military and civilian uses.

The IRS series

The Indian Remote Sensing satellites (IRS) are the series of India's earth observation satellites. The IRS series provides remote sensing services and is the largest collection of remote sensing satellites for civilian use in operation today in the world. All the satellites are placed in polar Sun-synchronous orbit (except GISATs) and provide data in a variety of spatial, spectral and temporal resolutions to enable several programmes to be undertaken relevant to national development. The initial versions are composed of the 1 (A, B, C, D) nomenclature while the later versions were divided into sub-classes named based on their functioning and uses including Oceansat, Cartosat, HySIS, EMISAT and ResourceSat etc.. The names although again were unified into prefix "EOS" again regardless of functioning again in 2020. These satellites

hold a wide range of applications including optical, radar and electronic reconnaissance for Indian agencies, city planning, oceanography and environmental studies.

The INSAT series

The Indian National Satellite System (INSAT) are the family of communication satellites of India. It is a series of multipurpose geostationary satellites built and launched by ISRO to satisfy the telecommunications, broadcasting, meteorology and search-and-rescue needs of the country. Since the introduction of first satellite in 1983, INSAT has become the largest domestic communication system in the Asia-Pacific Region. It is a joint venture of the Department of Space, Department of Telecommunications, India Meteorological Department, All India Radio and Doordarshan. The overall coordination and management of INSAT system rests with the Secretary-level INSAT Coordination Committee. The nomenclature of satellite series was shifted to "GSAT" from "INSAT" which was further changed to "CMS" from 2020 onwards. These satellites have been in use by Indian Armed Forcesas well. GSAT-9 or "SAARC Satellite" is a notable example for serving communication services for India's smaller neighbors.

Gagan Satellite Navigation System

The Ministry of Civil Aviation has decided to implement an indigenous Satellite-Based Regional GPS Augmentation System also known as Space-Based Augmentation System (SBAS) as part of the Satellite-Based Communications, Navigation, Surveillance and Air Traffic Management plan for civil aviation. The Indian SBAS system has been given an acronym GAGAN –

GPS Aided GEO Augmented Navigation. A national plan for satellite navigation including implementation of Technology Demonstration System over the Indian air space as a proof of concept has been prepared jointly by Airports Authority of India and ISRO. Technology Demonstration System was completed during 2007 by installing eight Indian Reference Stations at eight Indian airports and linked to the Master Control Centre located near Bangalore.

Navigation with Indian Constellation (NavIC)

IRNSS with an operational name NavIC is an independent regional navigation satellite system developed by India. It is designed to provide accurate position information service to users in India as well as the region extending up to 1500 km from its borders, which is its primary service area. IRNSS provides two types of services, namely, Standard Positioning Service (SPS) and Restricted Service (RS) and provides a position accuracy of better than 20 m in the primary service area.

It is an autonomous regional satellite navigation system developed by Indian Space Research Organisation, which is under total control of Indian government. The requirement of such a navigation system is driven by the fact that access to global navigation systems like GPS is not guaranteed in hostile situations.

Other satellites

Kalpana-1 (MetSat-1) was ISRO's first dedicated meteorological satellite. Indo-French satellite SARAL on 25 February 2013.

SARAL (or "Satellite with ARgos and AltiKa") is a cooperative altimetry technology mission, used for monitoring the oceans' surface and sea levels. AltiKa measures ocean surface topography with an accuracy of 8 mm, against 2.5 cm on average using altimeters, and with a spatial resolution of 2 km.

Launch vehicles

During the 1960s and 1970s, India initiated its own launch vehicles owing to geopolitical and economic considerations. In the 1960s–1970s, the country developed a sounding rocket, and by the 1980s, research had yielded the Satellite Launch Vehicle-3 and the more advanced Augmented Satellite Launch Vehicle (ASLV), complete with operational supporting infrastructure. ISRO further applied its energies to the advancement of launch vehicle technology resulting in the realisation of the successful PSLV and GSLV vehicles.

Satellite Launch Vehicle

Satellite Launch Vehicle (known as SLV-3) was the first space rocket to be developed by India. The initial launch in 1979 was a failure followed by a successful launch in 1980 making way for India into the club of countries with orbital launch capabilities. The development of bigger rockets was pushed ahead thereafter.

Augmented Satellite Launch Vehicle

Augmented or Advanced Satellite Launch Vehicle (ASLV) was another small launch vehicle realised in 1980s to develop technologies required to place satellites into geostationary

orbit. ISRO did not have adequate funds to develop ASLV and PSLV at once. Since ASLV suffered repeated failures, it was dropped in favour of a new project.

Polar Satellite Launch Vehicle

- Polar Satellite Launch Vehicle or PSLV is the first medium-lift launch vehicle from India which enabled India to launch all its remote-sensing satellites into Sun-synchronous orbit. PSLV had a failure in its maiden launch in 1993. Besides other two partial failure, PSLV has become primary workhorse for ISRO with more than 50 launches placing hundreds of Indian and foreign satellites into orbit.

Geosynchronous Satellite Launch Vehicle (GSLV)

Geosynchronous Satellite Launch Vehicle is envisaged in 1990s to transfer significant payloads to geostationary orbit. ISRO initially had great problem in development of GSLV as development of CE-7.5 in India took a decade. US had blocked India from obtaining cryogenic technology from Russia which induced India to develop its own cryogenic engines.

GSLV Mark III

- Geosynchronous Satellite Launch Vehicle Mark III (GSLV Mk III), also known as LVM3, is the heaviest rocket in operational service with ISRO. Equipped with a more powerful cryogenic engine and boosters than GSLV, it has significantly higher playload capacity and allows India to launch all its

communication satellites. LVM3 is expected to carry India's first manned mission to space and will be the testbed for SCE-200 engine which will power India's heavy lift rockets in future.

Human Spaceflight Programme

First proposal to send humans in space was discussed in ISRO in 2006 which subsequently led to the beginning of work on required infrastructure and spacecrafts. The trials for crewed space missions began in 2007 with the 600 kg Space Capsule Recovery Experiment (SRE), launched using the Polar Satellite Launch Vehicle (PSLV) rocket, and safely returned to earth 12 days later.

In 2009, the Indian Space Research Organisation proposed a budget of ₹124 billion (equivalent to ₹250 billion or US$3.5 billion in 2019) for its human spaceflight programme. An uncrewed demonstration flight was expected after seven years from the final approval and a crewed mission to be launched after seven years of funding. Manned mission initially wasn't a priority and was left on backburner for several years.

A space capsule recovery experiment in 2014 and a pad abort test in 2018 were followed by PM Modi's announcement on Independence Day address 15 August 2018 that India will send astronauts into space by 2022 on the new *Gaganyaan* spacecraft. Till date, ISRO has developed most of the technologies needed such as crew module and crew escape system, space food and life support systems. The project would cost less than ₹100 billion and would include sending 2 or 3

Indians to space, 300–400 km (190–250 mi) above in a spacecraft for at least seven days using a GSLV Mk-III launch vehicle.

Astronaut training and other facilities

The newly established Human Space Flight Centre (HSFC) will coordinate the IHSF campaign. ISRO will set up an astronaut training centre in Bangalore to prepare personnel for flights on board the crewed vehicle. The centre will use simulation facilities to train the selected astronauts in rescue and recovery operations and survival in zero gravity, and will undertake studies of the radiation environment of space. ISRO had to build centrifuges to prepare astronauts for the acceleration phase of the launch. Existing launch facilities in Satish Dhawan Space Centre would have to be upgraded for the Indian Human Spaceflight campaign. Human Space Flight Centre and Glavcosmos signed an agreement on 1 July 2019 for the selection, support, medical examination and space training of Indian astronauts. An ISRO Technical Liaison Unit (ITLU) was to be set up in Moscow to facilitate the development of some key technologies and establishment of special facilities which are essential to support life in space. The training of four Indian Air Force personnel was undertaken in Yuri Gagarin Cosmonaut Training Center and was completed in March 2021.

Crewed spacecraft

ISRO is working towards an orbital crewed spacecraft that can operate for seven days in a low Earth orbit. The spacecraft, called *Gaganyaan*, will be the basis of the Indian Human

Spaceflight Programme. The spacecraft is being developed to carry up to three people, and a planned upgraded version will be equipped with a rendezvous and docking capability. In its maiden crewed mission, ISRO's largely autonomous 3-tonne spacecraft will orbit the Earth at 400 km (250 mi) in altitude for up to seven days with a two-person crew on board. As of February 2021, the crewed mission is planned to be launched on ISRO's GSLV Mk III in 2023.

Space station

India plans to build a space station as a follow-up programme of the Gaganyaan mission. ISRO chairman K. Sivan has said that India will not join the International Space Station programme and will instead build a 20 tonne space station on its own. It is expected to be placed in a low Earth orbit of a 400-kilometre (250 mi) altitude and be capable of harbouring three humans for 15–20 days. Rough time-frame is five to seven years after completion of *Gaganyaan* project.

Planetary sciences and astronomy

There is a national balloon launching facility at Hyderabad jointly supported by TIFR and ISRO. This facility has been extensively used for carrying out research in high energy (i.e., X- and gamma-ray) astronomy, IR astronomy, middle atmospheric trace constituents including CFCs & aerosols, ionisation, electric conductivity and electric fields.

The flux of secondary particles and X-ray and gamma-rays of atmospheric origin produced by the interaction of the cosmic rays is very low. This low background, in the presence of which

one has to detect the feeble signal from cosmic sources is a major advantage in conducting hard X-ray observations from India. The second advantage is that many bright sources like Cyg X-1, Crab Nebula,

Scorpius X-1 and Galactic Centre sources are observable from Hyderabad due to their favourable declination. With these considerations, an X-ray astronomy group was formed at TIFR in 1967 and development of an instrument with an orientable X-ray telescope for hard X-ray observations was undertaken. The first balloon flight with the new instrument was made on 28 April 1968 in which observations of Scorpius X-1 were successfully carried out. In a succession of balloon flights made with this instrument between 1968 and 1974 a number of binary X-ray sources including Cyg X-1 and Her X-1, and the diffuse cosmic X-ray background were studied. Many new and astrophysically important results were obtained from these observations.

ISRO played a role in the discovery of three species of bacteria in the upper stratosphere at an altitude of between 20–40 km (12–25 mi).

The bacteria, highly resistant to ultra-violet radiation, are not found elsewhere on Earth, leading to speculation on whether they are extraterrestrial in origin. These three bacteria can be considered to be extremophiles. The bacteria were named as *Bacillus isronensis* in recognition of ISRO's contribution in the balloon experiments, which led to its discovery, *Bacillus aryabhata* after India's celebrated ancient astronomer Aryabhata and *Janibacter hoylei* after the distinguished astrophysicist Fred Hoyle.

Astrosat

Launched in 2015, Astrosat is India's first dedicated multi wavelength space observatory. Its observation study includes active galactic nuclei, hot white dwarfs, pulsations of pulsars, binary star systems, and supermassive black holes located at the centre of the galaxy.

Extraterrestrial exploration

Lunar exploration

Chandryaan (lit. 'Mooncraft') are the series of India's lunar exploration spacecrafts. Initial mission included orbiter and controlled impact probes while further missions include landers, rovers and sampling missions also.

- Chandrayaan-1

Chandrayaan-1 was India's first mission to the Moon. The robotic lunar exploration mission included a lunar orbiter and an impactor called the Moon Impact Probe. ISRO launched the spacecraft using a modified version of the PSLV on 22 October 2008 from Satish Dhawan Space Centre, Sriharikota. The vehicle was inserted into lunar orbit on 8 November 2008. It carried high-resolution remote sensing equipment for visible, near infrared, and soft and hard X-ray frequencies. During its 312 days operational period (2 years planned), it surveyed the lunar surface to produce a complete map of its chemical characteristics and 3-dimensional topography. The polar regions were of special interest, as they possibly had ice deposits. The spacecraft carried 11 instruments: 5 Indian and

6 from foreign institutes and space agencies (including NASA, ESA, Bulgarian Academy of Sciences, Brown University and other European and North American institutes/companies), which were carried free of cost. Chandrayaan-1 became the first lunar mission to discover existence of water on the Moon. The Chandrayaan-166 team was awarded the American Institute of Aeronautics and Astronautics SPACE 2009 award, the International Lunar Exploration Working Group's International Co-operation award in 2008, and the National Space Society's 2009 Space Pioneer Award in the science and engineering category.

- Chandrayaan-2

Chandrayaan-2 is the second mission to the Moon, which included an orbiter, a lander and a rover. Chandrayaan-2 was launched on a Geosynchronous Satellite Launch Vehicle Mark III (GSLV-MkIII) on 22 July 2019, consisted of a lunar orbiter, the Vikram lander, and the Pragyan lunar rover, all of which were developed in India. It was the first mission meant to explore the little-explored lunar south pole region. The main objective of the Chandrayaan-2 mission is to demonstrate ISRO's ability to soft-land on the lunar surface and operate a robotic rover on the surface. Some of its scientific aims are to conduct studies of lunar topography, mineralogy, elemental abundance, the lunar exosphere, and signatures of hydroxyl and water ice.

The *Vikram* lander, carrying the *Pragyan* rover, was scheduled to land on the near side of the Moon, in a south polar region at a latitude of about 70° south at approximately 1:50 am(IST) on 7 September 2019. However, the lander deviated from its

intended trajectory starting from an altitude of 2.1 kilometres (1.3 mi), and telemetry was lost seconds before touchdown was expected.

A review board concluded that the crash-landing was caused by a software glitch. The lunar orbiter was efficiently positioned in an optimal lunar orbit, extending its expected service time from one year to seven years. There will be another attempt for soft landing on moon in early 2022, but without an orbiter.

Mars exploration

- Mars Orbiter Mission *(MOM)* or *(Mangalyaan-1)*

The Mars Orbiter Mission (MOM), informally known as *Mangalyaan*, was launched into Earth orbit on 5 November 2013 by the Indian Space Research Organisation (ISRO) and has entered Mars orbit on 24 September 2014. India thus became the first country to enter Mars orbit on its first attempt. It was completed at a record low cost of $74 million.

MOM was placed into Mars orbit on 24 September 2014 at 8:23 am IST. The spacecraft had a launch mass of 1,337 kg (2,948 lb), with 15 kg (33 lb) of five scientific instruments as payload.

The National Space Society awarded the Mars Orbiter Mission team the 2015 Space Pioneer Award in the science and engineering category.

Future projects

Along with a number of communication and earth observation satellites in future, ISRO aims to send humans into space and later establish a space station to facilitate a few weeks long stay of astronauts. Agency aims to develop and operationalise more powerful and less pollutive rocket engines to eventually develop much heavier rockets, develop electric and nuclear propulsion for satellites and spacecrafts for reduced weight and longer lives, landing a rover on the moon, sending missions to Sun, Venus, Mars, asteroids, comets and outer solar system, deploying more telescopes in space and developing satellite navigation systems with global coverage. Long term plans may include manned landings on moon and other planets as well.

Launch vehicles and engines

Semi-cryogenic engine

SCE-200 is a rocket grade kerosene (dubbed "ISROsene") and LOX based semi-cryogenic rocket engine inspired from RD-120. The engine will be less pollutive and far more powerful. When mated with GSLV Mark III, the engine will boost its payload capacity and will be used in clusters in future to power India's heavy rockets.

Methalox engine

Methane and LOX based engines are being developed to ensure reusability of engines. Methane is less pollutive, leaves no

residue and hence engine needs no refurbishment. LPSC has already undertaken cold flow tests of engine prototypes in 2020.

Modular heavy rockets

A number of concepts of heavy and super-heavy lift launch vehicles are currently being studied by the agency. Launchers are being designed to be modular to facilitate interchangeability of parts and reduce the time of production. There have been multiple mentions of a 10 tonnes capacity "HLV" and an "SHLV"capable of delivering 50-100 tonnes into orbit in various reports, statements and presentations from ISRO officials.

ISRO has a target to develop a launcher in the 2020s which will be capable of carrying nearly 16 tonnes to geostationary transfer orbit which would be nearly four times that of the existing GSLV Mark III. ISRO has also been confirmed to be conducting preliminary research for the development of a Super heavy-lift launch vehicle which is planned to have a lifting capacity of over 50–60 tonnes into earth's orbit.

Reusable launchers

There have been two reusable launcher projects ongoing at ISRO. One is ADMIRE test vehicle, conceived as a VTVL system and another is RLV-TD programme, being run to develop a spacecraft similar to American space shuttle which will be launched vertically but land like a plane.

For realising a two-stage-to-orbit (TSTO) fully re-usable launch vehicle, a series of technology demonstration missions have

been conceived. For this purpose, the winged Reusable Launch Vehicle Technology Demonstrator (RLV-TD) has been configured. The RLV-TD is acting as a flying testbed to evaluate various technologies such as hypersonic flight, autonomous landing, powered cruise flight, and hypersonic flight using air-breathing propulsion. First in the series of demonstration trials was the Hypersonic Flight Experiment (HEX). ISRO launched the prototype's test flight from the Sriharikota spaceport in February 2016. The prototype, called RLV-TD, weighs around 1.5 tonnes and flew up to a height of 70 km (43 mi). The test flight, known as HEX, was completed on 23 May 2016. A scaled up version of could serve as fly-back booster stage for their winged TSTO concept. The test is to be followed by a landing experiment (LEX) and return flight experiment (REX).

- Small Satellite Launch Vehicle

Small Satellite Launch Vehicle (SSLV) is a compact small-lift launch vehicle primarily aimed at tapping small satellites market. This launcher can be quickly assembled with low power and hence facilitates far higher launch frequency. SSLV can place 500 kg (1,100 lb) in 500 km (310 mi) low earth orbit and 300 kg (660 lb) in Sun-synchronous orbit.

Spacecraft propulsion and power

- Electric thrusters

India has been working on replacing conventional chemical propulsion with hall effect and plasma thrusters which would help in cutting down spacecrafts' mass. GSAT-4 was first Indian spacecraft to carry electric thrusters but failed to reach

orbit. GSAT-9 launched later in 2017 had partial electric propulsion. GSAT-20 is expected to be first fully electric satellite from India.

- Alpha source thermoelectric propulsion technology
- Radioisotope thermoelectric generator (RTG), also called alpha source thermoelectric technology by ISRO is a type of atomic battery which uses nuclear decay heat of radioactive material to power the spacecraft. In January 2021, U R Rao Satellite Centre issued an Expression of Interest (EoI) for design and development of a 100 W RTG. RTGs ensure much longer spacecraft life and have less mass than solar panels on satellites. Development of RTGs will allow ISRO to undertake long endurance deep space missions to Jupiter, Saturn, Uranus and Neptune.Lunar exploration

Chandryaan-3 is India's planned second attempt to soft land on the moon after failure of Chandrayaan-2 in doing so. The mission will only include a lander-rover set and will communicate with the orbiter of previous mission. The technology demonstrated in a successful moon landing will be used in joint Indo-Japanese Lunar Polar Exploration Mission for sampling and analysis of lunar soil.

- Mars exploration

The next Mars mission, Mars Orbiter Mission 2 or Mangalyaan 2 has been proposed for launch in 2024. The newer spacecraft will be significantly heavier and better equipped than its predecessor.

- Venus exploration

ISRO is assessing an orbiter mission to Venus called *Shukrayaan-1*, that could launch as early as 2023 to study its atmosphere. Some budget has been allocated to perform preliminary studies as part of 2017–18 Indian budget under Space Sciences, and solicitations for potential instruments were requested in 2017 and in 2018. Mission to Venus is scheduled for 2025 that will include a payload instrument called Venus Infrared Atmospheric Gases Linker (VIRAL) which is co-developed with Laboratoire atmosphères, milieux, observations spatiales (LATMOS) under French National Centre for Scientific Research (CNRS) and Roscosmos.

- Solar probes

ISRO is scheduled to carry out a mission to study the Solar corona, due for launch in 2022. The probe is named Aditya-L1 and will have a mass of about 400 kg (880 lb). It is the first Indian space-based solar coronagraph to study the corona in visible and near-IR bands. Launch of the Aditya mission was planned during the heightened solar activity period in 2012, but was postponed to 2021 due to the extensive work involved in the fabrication, and other technical aspects. The main objective of the mission is to study coronal mass ejections (CMEs), their properties (the structure and evolution of their magnetic fields for example), and consequently constrain parameters that affect space weather.

- Asteroids and outer solar system

Conceptual studies are underway to launch spacecrafts to asteroids and Jupiter as well in long term. The ideal launch

window to send a spacecraft to Jupiter occurs every 33 months. If the mission to Jupiter is launched, a flyby of Venus would be required.

Development of RTEG might facilitate agency to further undertake deeper space missions like to Jupiter, Saturn, Uranus and Neptune.

Space telescopes and observatories

- AstroSat-2

AstroSat-2 is the successor of Astrosat mission.

- XPoSat

The X-ray Polarimeter Satellite (XPoSat) is a planned mission to study polarisation. It is planned to have a mission life of five years and is planned to be launched in 2021.

The spacecraft is planned to carry the Polarimeter Instrument in X-rays (POLIX) payload which will study the degree and angle of polarisation of bright astronomical X-ray sources in the energy range 5–30 keV.

- Exoworlds

Exoworlds is a joint proposal by ISRO, IIST and the University of Cambridge for a space telescope dedicated for atmospheric studies of exoplanets. The proposal is aiming for readiness by 2025.

Applications

Telecommunication

India uses its satellite communication network – one of the largest in the world – for applications such as land management, water resources management, natural disaster forecasting, radio networking, weather forecasting, meteorological imaging and computer communication. Business, administrative services, and schemes such as the National Informatics Centre (NIC) are direct beneficiaries of applied satellite technology. Dinshaw Mistry, on the subject of practical applications of the Indian space program, writes:

"The INSAT-2 satellites also provide telephone links to remote areas; data transmission for organisations such as the National Stock Exchange; mobile satellite service communications for private operators, railways, and road transport; and broadcast satellite services, used by India's state-owned television agency as well as commercial television channels. India's EDUSAT (Educational Satellite), launched aboard the GSLV in 2004, was intended for adult literacy and distance learning applications in rural areas. It augmented and would eventually replace such capabilities already provided by INSAT-3B."

Resource management

The IRS satellites have found applications with the Indian Natural Resource Management program, with Regional Remote Sensing Service Centres in five Indian cities, and with Remote Sensing Application Centres in twenty Indian states that use

IRS images for economic development applications. These include environmental monitoring, analysing soil erosion and the impact of soil conservation measures, forestry management, determining land cover for wildlife sanctuaries, delineating groundwater potential zones, flood inundation mapping, drought monitoring, estimating crop acreage and deriving agricultural production estimates, fisheries monitoring, mining and geological applications such as surveying metal and mineral deposits, and urban planning.

Military

Integrated Space Cell, under the Integrated Defence Staff headquarters of the Indian Ministry of Defence, has been set up to utilise more effectively the country's space-based assets for military purposes and to look into threats to these assets. This command will leverage space technology including satellites. Unlike an aerospace command, where the air force controls most of its activities, the Integrated Space Cell envisages cooperation and coordination between the three services as well as civilian agencies dealing with space. With 14 satellites, including GSAT-7A for the exclusive military use and the rest as dual use satellites,

India has the fourth largest number of satellites active in the sky which includes satellites for the exclusive use of Indian Air Force and Indian Navy respectively. GSAT-7A, an advanced military communications satellite exclusively for the Indian Air Force, is similar to Indian Navy's GSAT-7, and GSAT-7A will enhance Network-centric warfare capabilities of the Indian Air Force by interlinking different ground radar stations, ground airbase and Airborne early warning and control (AWACS)

aircraft such as Beriev A-50 Phalcon and DRDO AEW&CS. GSAT-7A will also be used by Indian Army's Aviation Corps for its helicopters and UAV's operations. In 2013, ISRO launched GSAT-7 for the exclusive use of the Indian Navy to monitor the Indian Ocean Region (IOR) with the satellite's 2,000-nautical-mile (3,700 km; 2,300 mi) 'footprint' and real-time input capabilities to Indian warships, submarines and maritime aircraft.

To boost the network-centric operations of the IAF, ISRO launched GSAT-7A on 19 December 2018. The RISAT series of radar-imaging earth observation satellites is also meant for Military use. ISRO launched EMISAT on 1 April 2019. EMISAT is an electronic intelligence (ELINT) satellite which has a weight of 436-kg. It will help improve the situational awareness of the Indian Armed Forces by providing information and location of hostile radars.

India's satellites and satellite launch vehicles have had military spin-offs. While India's 150–200-kilometre (93–124 mi) range Prithvi missile is not derived from the Indian space programme, the intermediate range Agni missile is drawn from the Indian space programme's SLV-3. In its early years, when headed by Vikram Sarabhai and Satish Dhawan, ISRO opposed military applications for its dual-use projects such as the SLV-3. Eventually, the Defence Research and Development Organisation (DRDO) based missile programme borrowed human resources and technology from ISRO. Missile scientist A.P.J. Abdul Kalam (elected president of India in 2002), who had headed the SLV-3 project at ISRO, moved to DRDO to direct India's missile programme. About a dozen scientists accompanied Kalam from ISRO to DRDO, where he designed

the Agni missile using the SLV-3's solid fuel first stage and a liquid-fuel (Prithvi-missile-derived) second stage. The IRS and INSAT satellites were primarily intended and used for civilian-economic applications, but they also offered military spin-offs. In 1996 New Delhi's Ministry of Defence temporarily blocked the use of IRS-1C by India's environmental and agricultural ministries to monitor ballistic missiles near India's borders. In 1997, the Indian Air Force's "Airpower Doctrine" aspired to use space assets for surveillance and battle management.

Academic

Institutions like the Indira Gandhi National Open University and the Indian Institutes of Technology use satellites for scholarly applications. Between 1975 and 1976, India conducted its largest sociological programme using space technology, reaching 2400 villages through video programming in local languages aimed at educational development via ATS-6 technology developed by NASA.

This experiment—named Satellite Instructional Television Experiment (SITE)—conducted large scale video broadcasts resulting in significant improvement in rural education. Education could reach far remote rural places with the help of above programs.

Telemedicine

ISRO has applied its technology for telemedicine, directly connecting patients in rural areas to medical professionals in urban locations via satellites. Since high-quality healthcare is not universally available in some of the remote areas of India,

the patients in remote areas are diagnosed and analysed by doctors in urban centers in real time via video conferencing. The patient is then advised medicine and treatment. The patient is then treated by the staff at one of the 'super-specialty hospitals' under instructions from the doctor. Mobile telemedicine vans are also deployed to visit locations in far-flung areas and provide diagnosis and support to patients.

Biodiversity Information System

ISRO has also helped implement India's Biodiversity Information System, completed in October 2002. Nirupa Sen details the program: "Based on intensive field sampling and mapping using satellite remote sensing and geospatial modeling tools, maps have been made of vegetation cover on a 1: 250,000 scale.

This has been put together in a web-enabled database that links gene-level information of plant species with spatial information in a BIOSPEC database of the ecological hot spot regions, namely northeastern India,

Western Ghats, Western Himalayas and Andaman and Nicobar Islands. This has been made possible with collaboration between the Department of Biotechnology and ISRO."

Cartography

The Indian IRS-P5 (CARTOSAT-1) was equipped with high-resolution panchromatic equipment to enable it for cartographic purposes. IRS-P5 (CARTOSAT-1) was followed by a more advanced model named IRS-P6 developed also for agricultural applications.

The CARTOSAT-2 project, equipped with single panchromatic camera that supported scene-specific on-spot images, succeeded the CARTOSAT-1 project.

Spin-offs

ISRO's research has been diverted into spin-offs to develop various technologies for other sectors. Examples include bionic limbs for people without or amputated limbs, silica aerogel to keep Indian soldiers warm who are serving in extremely cold areas, distress alert transmitters for accidents, Doppler weather radar and various sensors and machines for inspection work in engineering industries.

International cooperations

ISRO has signed various formal cooperative arrangements in the form of either Agreements or Memoranda of Understanding (MoU) or Framework Agreements with Afghanistan, Algeria, Argentina, Armenia, Australia, Bahrain, Bangladesh, Bolivia, Brazil, Brunei, Bulgaria, Canada, Chile, China, Egypt, Finland, France, Germany, Hungary, Indonesia, Israel, Italy, Japan, Kazakhstan, Kuwait, Maldives, Mauritius, Mexico, Mongolia, Morocco, Myanmar, Norway, Peru, Portugal, South Korea, Russia, São Tomé and Príncipe, Saudi Arabia, Singapore, South Africa, Spain, Oman, Sweden, Syria, Tajikistan, Thailand, the Netherlands, Tunisia, Ukraine, United Arab Emirates, United Kingdom, United States, Uzbekistan, Venezuela and Vietnam. Formal cooperative instruments have been signed with international multilateral bodies including European Centre for Medium-Range Weather Forecasts (ECMWF), European Commission, European Organisation for

the Exploitation of Meteorological Satellites (EUMETSAT), European Space Agency (ESA) and South Asian Association for Regional Cooperation (SAARC).

Notable collaborative projects

- Chandryaan-1
- Chandrayaan-1 also carried scientific payloads to the moon from NASA, ESA, Bulgarian Space Agency, and other institutions/companies in North America and Europe.
- Indo-French satellite missions

ISRO has two collaborative satellite missions with CNES, namely Megha-Tropiques to study water cycle in the tropical atmosphere and SARAL for altimetry. A third mission consisting of an earth observation satellite with thermal infrared imager,

TRISHNA (Thermal infraRed Imaging Satellite for High resolution Natural resource Assessment) is being planned between two countries.

- LUPEX

Lunar Polar Exploration Mission is a joint Indo-Japanese mission to study the surface of polar moon where India is tasked with providing soft landing technologies.

- NISAR

NASA-ISRO Synthetic Aperture Radar (NISAR) is a joint Indo-US radar project carrying an L Band and an S Band radar. It will be world's first radar imaging satellite to use dual frequencies.

Some other notable instances include:

- ISRO operates LUT/MCC under the international COSPAS/SARSAT Programme for Search and Rescue.
- India has established a Centre for Space Science and Technology Education in Asia and the Pacific (CSSTE-AP) that is sponsored by the United Nations.
- India is a member of the United Nations Committee on the Peaceful Uses of Outer Space, Cospas-Sarsat, International Astronautical Federation, Committee on Space Research (COSPAR), Inter-Agency Space Debris Coordination Committee (IADC), International Space University, and the Committee on Earth Observation Satellite (CEOS).
- Contributing to planned BRICS virtual constellation for remote sensing.

Statistics

Last updated: 4 March 2021

- Total number of foreign satellites launched by ISRO: 342 (35 countries)
- Spacecraft missions: 117
- Launch missions: 77
- Student satellites: 10
- Re-entry missions: 2

Controversies

S-band spectrum scam

In India, electromagnetic spectrum, being a scarce resource for wireless communication, is auctioned by the Government of India to telecom companies for use. As an example of its value, in 2010, 20 MHz of 3G spectrum was auctioned for ₹677 billion (US$9.5 billion). This part of the spectrum is allocated for terrestrial communication (cell phones). However, in January 2005, Antrix Corporation (commercial arm of ISRO) signed an agreement with Devas Multimedia (a private company formed by former ISRO employees and venture capitalists from the US) for lease of S band transponders (amounting to 70 MHz of spectrum) on two ISRO satellites (GSAT 6 and GSAT 6A) for a price of ₹14 billion (US$200 million), to be paid over a period of 12 years.

The spectrum used in these satellites (2500 MHz and above) is allocated by the International Telecommunication Union specifically for satellite-based communication in India. Hypothetically, if the spectrum allocation is changed for utilisation for terrestrial transmission and if this 70 MHz of spectrum were sold at the 2010 auction price of the 3G spectrum, its value would have been over ₹2,000 billion (US$28 billion). This was a hypothetical situation. However, the Comptroller and Auditor General of India considered this hypothetical situation and estimated the difference between the prices as a loss to the Indian Government.

There were lapses on implementing Government of India procedures. Antrix/ISRO had allocated the capacity of the

above two satellites to Devas Multimedia on an exclusive basis, while rules said it should always be non-exclusive. The Cabinet was misinformed in November 2005 that several service providers were interested in using satellite capacity, while the Devas deal was already signed. Also, the Space Commission was kept in the dark while taking approval for the second satellite (its cost was diluted so that Cabinet approval was not needed). ISRO committed to spending ₹7.66 billion (US$110 million) of public money on building, launching, and operating two satellites that were leased out for Devas.

In late 2009, some ISRO insiders exposed information about the Devas-Antrix deal, and the ensuing investigations resulted in the deal being annulled. G. Madhavan Nair (ISRO Chairperson when the agreement was signed) was barred from holding any post under the Department of Space. Some former scientists were found guilty of "acts of commission" or "acts of omission". Devas and Deutsche Telekom demanded US$2 billion and US$1 billion, respectively, in damages. Government of India's Department of Revenue and Ministry of Corporate Affairs initiated an inquiry into Devas shareholding.

The Central Bureau of Investigation concluded investigations into the Antrix-Devas scam and registered a case against the accused in the Antrix-Devas deal under Section 120-B, besides Section 420 of IPC and Section 13(2) read with 13(1)(d) of PC Act, 1988 on 18 March 2015 against the then Executive Director of Antrix Corporation, two officials of USA-based company, Bangalore based private multimedia company, and other unknown officials of Antrix Corporation or Department of Space.

Devas Multimedia started arbitration proceedings against Antrix in June 2011. In September 2015, the International Court of Arbitration of the International Chamber of Commerce ruled in favour of Devas, and directed Antrix to pay US$672 million (Rs 44.35 billion) in damages to Devas. Antrix opposed the Devas plea for tribunal award in the Delhi High Court.

Chapter 30

Narendra Modi

Narendra Damodardas Modi born 17 September 1950) is an Indian politician serving as the 14th and current prime minister of India since 2014. He was the chief minister of Gujarat from 2001 to 2014 and is the Member of Parliament for Varanasi. Modi is a member of the Bharatiya Janata Party (BJP) and its National Democratic Alliance (NDA). He is also a member of the Rashtriya Swayamsevak Sangh (RSS), a Hindu nationalist volunteer organisation. He is the first prime minister born after India's independence in 1947, the second non-Congress one to win two consecutive terms after Atal Bihari Vajpayee and the first from outside the Congress to win both terms with a majority in the Lok Sabha.

Born and raised in Vadnagar, a small town in northeastern Gujarat, Modi completed his secondary education there, and is said to have helped his father sell tea at the local railway station. He was introduced to the RSS at age eight. Modi left home at age 18 soon after his marriage to Jashodaben Chamanlal, which he publicly acknowledged many decades later. Modi has asserted that he travelled around India for two years, visiting a number of religious centres. Upon his return to Gujarat in 1971, he became a full-time worker for the RSS. During the state of emergency imposed across the country in 1975, Modi went into hiding. The RSS assigned him to the BJP in 1985 and he held several positions within the party hierarchy until 2001, rising to the rank of general secretary.

Modi was appointed Chief Minister of Gujarat in 2001 due to Keshubhai Patel's failing health and poor public image following the earthquake in Bhuj. Modi was elected to the legislative assembly soon after. His administration has been considered complicit in the 2002 Gujarat riots, or otherwise criticised for its handling of it. A Supreme Court-appointed Special Investigation Team found no evidence to initiate prosecution proceedings against Modi personally. His policies as chief minister, credited with encouraging economic growth, have received praise. His administration has been criticised for failing to significantly improve health, poverty and education indices in the state.

Modi led the BJP in the 2014 general election which gave the party a majority in the Indian lower house of parliament, the Lok Sabha, the first time for any single party since 1984. Modi's administration has tried to raise foreign direct investment in the Indian economy and reduced spending on healthcare and social welfare programmes. Modi has attempted to improve efficiency in the bureaucracy; he has centralised power by abolishing the Planning Commission. He began a high-profile sanitation campaign, initiated a controversial demonetisation of high-denomination banknotes and weakened or abolished environmental and labour laws.

Under Modi's tenure, India has experienced democratic backsliding. Following his party's victory in the 2019 general election, his administration revoked the special status of Jammu and Kashmir. His administration also introduced the Citizenship Amendment Act, which resulted in widespread protests across the country. Described as engineering a political realignment towards right-wing politics, Modi remains

a figure of controversy domestically and internationally over his Hindu nationalist beliefs and his alleged role during the 2002 Gujarat riots, cited as evidence of an exclusionary social agenda.

Early life and education

Narendra Modi was born on 17 September 1950 to a Gujarati Hindu family of grocers in Vadnagar, Mehsana district, Bombay State (present-day Gujarat). He was the third of six children born to Damodardas Mulchand Modi (c. 1915–1989) and Hiraben Modi (born c. 1920). Modi's family belonged to the Modh-Ghanchi-Teli (oil-presser) community, which is categorised as an Other Backward Class by the Indian government. He was falsely accused by Mayawati that he added his caste to the Other Backward Class (OBC) list as a political tool.

As a child, Modi is said to have helped his father sell tea at the Vadnagar railway station, and said that he later ran a tea stall with his brother near a bus terminus. Modi completed his higher secondary education in Vadnagar in 1967, where a teacher described him as an average student and a keen debater, with interest in theatre. Modi had an early gift for rhetoric in debates, and his teachers and students noted this. Modi preferred playing larger-than-life characters in theatrical productions, which has influenced his political image.

When eight years old, Modi was introduced to the Rashtriya Swayamsevak Sangh (RSS) and began attending its local *shakhas* (training sessions). There, Modi met Lakshmanrao Inamdar, popularly known as Vakil Saheb, who inducted him

as a *balswayamsevak* (junior cadet) in the RSS and became his political mentor. While Modi was training with the RSS, he also met Vasant Gajendragadkar and Nathalal Jaghda, Bharatiya Jana Sangh leaders who were founding members of the BJP's Gujarat unit in 1980.

In a custom traditional to Narendra Modi's caste, his family arranged a betrothal to a girl, Jashodaben Chimanlal Modi, leading to their marriage when she was 17 and he was 18. Soon afterwards, he abandoned his bride, and left home, the couple going on to lead separate lives, neither marrying again, and the marriage itself remaining unmentioned in Modi's public pronouncements for many decades. In April 2014, shortly before the national elections that swept him to power, Modi publicly affirmed that he was married and his spouse was Jashodaben; the couple has remained married, but estranged.

Modi spent the ensuing two years travelling across Northern and North-eastern India, though few details of where he went have emerged. In interviews, Modi has described visiting Hindu ashrams founded by Swami Vivekananda: the Belur Math near Kolkata, followed by the Advaita Ashrama in Almora and the Ramakrishna Mission in Rajkot. Modi remained only a short time at each, since he lacked the required college education. Vivekananda has been described as a large influence in Modi's life.

In the early summer of 1968, Modi reached the Belur Math but was turned away, after which Modi wandered through Calcutta, West Bengal and Assam, stopping in Siliguri and Guwahati. Modi then went to the Ramakrishna Ashram in Almora, where he was again rejected, before travelling back to Gujarat via

Delhi and Rajasthan in 1968–69. Sometime in late 1969 or early 1970, Modi returned to Vadnagar for a brief visit before leaving again for Ahmedabad. There, Modi lived with his uncle, working in the latter's canteen at the Gujarat State Road Transport Corporation.

In Ahmedabad, Modi renewed his acquaintance with Inamdar, who was based at the Hedgewar Bhavan (RSS headquarters) in the city. Modi's first known political activity as an adult was in 1971 when he joined a Jana Sangh satyagraha in Delhi led by Atal Bihari Vajpayee to enlist for the battlefield. But the Indira Gandhi led Central government disallowed open support to Mukti Bahini and Modi was put in Tihar Jail for a short period. After the Indo-Pakistani War of 1971, he stopped working for his uncle and became a full-time *pracharak* (campaigner) for the RSS, working under Inamdar. Shortly before the war, Modi took part in a non-violent protest against the Indian government in New Delhi, for which he was arrested; this has been cited as a reason for Inamdar electing to mentor him. Many years later Modi would co-author a biography of Inamdar, published in 2001.

In 1978 Modi received a Bachelor of Arts degree in political science from the School of Open Learning at the University of Delhi, graduating with a third class. Five years later, in 1983, he received a Master of Arts degree in political science from Gujarat University, graduating with a first class as an external distance learning student.

Early political career

In June 1975, Prime Minister Indira Gandhi declared a state of emergency in India which lasted until 1977. During this period, known as "The Emergency", many of her political opponents were jailed and opposition groups were banned. Modi was appointed general secretary of the "Gujarat Lok Sangharsh Samiti", an RSS committee co-ordinating opposition to the Emergency in Gujarat. Shortly afterwards, the RSS was banned. Modi was forced to go underground in Gujarat and frequently travelled in disguise to avoid arrest.

He became involved in printing pamphlets opposing the government, sending them to Delhi and organising demonstrations. Modi was also involved with creating a network of safe houses for individuals wanted by the government, and in raising funds for political refugees and activists. During this period, Modi wrote a book in Gujarati, *Sangharsh Ma Gujarat* (*In The Struggles of Gujarat*), describing events during the Emergency. Among the people he met in this role was trade unionist and socialist activist George Fernandes, as well as several other national political figures. In his travels during the Emergency, Modi was often forced to move in disguise, once dressing as a monk, and once as a Sikh.

Modi became an RSS *sambhag pracharak* (regional organiser) in 1978, overseeing RSS activities in the areas of Surat and Vadodara, and in 1979 he went to work for the RSS in Delhi, where he was put to work researching and writing the RSS's version of the history of the Emergency. He returned to Gujarat a short while later, and was assigned by the RSS to the BJP in

1985. In 1987 Modi helped organise the BJP's campaign in the Ahmedabad municipal election, which the BJP won comfortably; Modi's planning has been described as the reason for that result by biographers. After L. K. Advani became president of the BJP in 1986, the RSS decided to place its members in important positions within the BJP; Modi's work during the Ahmedabad election led to his selection for this role, and Modi was elected organising secretary of the BJP's Gujarat unit later in 1987.

Modi rose within the party and was named a member of the BJP's National Election Committee in 1990, helping organise L. K. Advani's 1990 Ram Rath Yatra in 1990 and Murli Manohar Joshi's 1991–92 *Ekta Yatra* (Journey for Unity). However, he took a brief break from politics in 1992, instead establishing a school in Ahmedabad; friction with Shankersinh Vaghela, a BJP MP from Gujarat at the time, also played a part in this decision. Modi returned to electoral politics in 1994, partly at the insistence of Advani, and as party secretary, Modi's electoral strategy was considered central to the BJP victory in the 1995 state assembly elections.

In November of that year Modi was elected BJP national secretary and transferred to New Delhi, where he assumed responsibility for party activities in Haryana and Himachal Pradesh. The following year, Shankersinh Vaghela, a prominent BJP leader from Gujarat, defected to the Indian National Congress (Congress, INC) after losing his parliamentary seat in the Lok Sabha elections. Modi, on the selection committee for the 1998 Assembly elections in Gujarat, favoured supporters of BJP leader Keshubhai Patel over those supporting Vaghela to end factional division in the party. His strategy was credited as

key to the BJP winning an overall majority in the 1998 elections, and Modi was promoted to BJP general secretary (organisation) in May of that year.

Chief Minister of Gujarat

Taking office

In 2001, Keshubhai Patel's health was failing and the BJP lost a few state assembly seats in by-elections. Allegations of abuse of power, corruption and poor administration were made, and Patel's standing had been damaged by his administration's handling of the earthquake in Bhuj in 2001. The BJP national leadership sought a new candidate for the chief ministership, and Modi, who had expressed misgivings about Patel's administration, was chosen as a replacement. Although BJP leader L. K. Advani did not want to ostracise Patel and was concerned about Modi's lack of experience in government, Modi declined an offer to be Patel's deputy chief minister, telling Advani and Atal Bihari Vajpayee that he was "going to be fully responsible for Gujarat or not at all". On 3 October 2001 he replaced Patel as Chief Minister of Gujarat, with the responsibility of preparing the BJP for the December 2002 elections. Modi was sworn in as Chief Minister on 7 October 2001, and entered the Gujarat state legislature on 24 February 2002 by winning a by-election to the Rajkot – II constituency, defeating Ashwin Mehta of the INC by 14,728 votes.

2002 Gujarat riots

On 27 February 2002, a train with several hundred passengers burned near Godhra, killing approximately 60 people. The train

carried a large number of Hindu pilgrims returning from Ayodhya after a religious ceremony at the site of the demolished Babri Masjid. In making a public statement after the incident, Modi declared it a terrorist attack planned and orchestrated by local Muslims. The next day, the Vishwa Hindu Parishad called for a *bandh* across the state. Riots began during the *bandh*, and anti-Muslim violence spread through Gujarat. The government's decision to move the bodies of the train victims from Godhra to Ahmedabad further inflamed the violence. The state government stated later that 790 Muslims and 254 Hindus were killed. Independent sources put the death toll at over 2000. Approximately 150,000 people were driven to refugee camps. Numerous women and children were among the victims; the violence included mass rapes and mutilations of women.

The government of Gujarat itself is generally considered by scholars to have been complicit in the riots, and has otherwise received heavy criticism for its handling of the situation. Several scholars have described the violence as a pogrom, while others have called it an example of state terrorism. Summarising academic views on the subject,

Martha Nussbaum said: "There is by now a broad consensus that the Gujarat violence was a form of ethnic cleansing, that in many ways it was premeditated, and that it was carried out with the complicity of the state government and officers of the law." The Modi government imposed a curfew in 26 major cities, issued shoot-at-sight orders and called for the army to patrol the streets, but was unable to prevent the violence from escalating. The president of the state unit of the BJP expressed support for the *bandh*, despite such actions being illegal at the

time. State officials later prevented riot victims from leaving the refugee camps, and the camps were often unable to meet the needs of those living there. Muslim victims of the riots were subject to further discrimination when the state government announced that compensation for Muslim victims would be half of that offered to Hindus, although this decision was later reversed after the issue was taken to court. During the riots, police officers often did not intervene in situations where they were able.

Modi's personal involvement in the 2002 events has continued to be debated. During the riots, Modi said that "What is happening is a chain of action and reaction." Later in 2002, Modi said the way in which he had handled the media was his only regret regarding the episode. In March 2008, the Supreme Court reopened several cases related to the 2002 riots, including that of the Gulbarg Society massacre, and established a Special Investigation Team (SIT) to look into the issue. In response to a petition from Zakia Jafri (widow of Ehsan Jafri, who was killed in the Gulbarg Society massacre), in April 2009 the court also asked the SIT to investigate the issue of Modi's complicity in the killings.

The SIT questioned Modi in March 2010; in May, it presented to the court a report finding no evidence against him. In July 2011, the court-appointed *amicus curiae* Raju Ramachandran submitted his final report to the court. Contrary to the SIT's position, he said that Modi could be prosecuted based on the available evidence. The Supreme Court gave the matter to the magistrate's court. The SIT examined Ramachandran's report, and in March 2012 submitted its final report, asking for the case to be closed. Zakia Jafri filed a protest petition in

response. In December 2013 the magistrate's court rejected the protest petition, accepting the SIT's finding that there was no evidence against the chief minister.

2002 election

In the aftermath of the violence there were widespread calls for Modi to resign as chief minister from within and outside the state, including from leaders of the Dravida Munnetra Kazhagam and the Telugu Desam Party (allies in the BJP-led National Democratic Alliance coalition), and opposition parties stalled Parliament over the issue. Modi submitted his resignation at the April 2002 BJP national executive meeting in Goa, but it was not accepted. His cabinet had an emergency meeting on 19 July 2002, after which it offered its resignation to the Gujarat Governor S. S. Bhandari, and the state assembly was dissolved. Despite opposition from the election commissioner, who said that a number of voters were still displaced,

Modi succeeded in advancing the election to December 2002. In the elections, the BJP won 127 seats in the 182-member assembly. Although Modi later denied it, he made significant use of anti-Muslim rhetoric during his campaign, and the BJP profited from religious polarisation among the voters. He won the Maninagar constituency, receiving 113,589 of 154,981 votes and defeating INC candidate Yatin Oza by 75,333 votes. On 22 December 2002, Bhandari swore Modi in for a second term. Modi framed the criticism of his government for human rights violations as an attack upon Gujarati pride, a strategy which led to the BJP winning two-thirds of the seats in the state assembly.

Second term

During Modi's second term the rhetoric of the government shifted from Hindutva to Gujarat's economic development. Modi curtailed the influence of Sangh Parivar organisations such as the Bharatiya Kisan Sangh (BKS) and the Vishva Hindu Parishad (VHP), entrenched in the state after the decline of Ahmedabad's textile industry, and dropped Gordhan Zadafia (an ally of former Sangh co-worker and VHP state chief Praveen Togadia) from his cabinet. When the BKS staged a farmers' demonstration Modi ordered their eviction from state-provided houses, and his decision to demolish 200 illegal temples in Gandhinagar deepened the rift with the Vishva Hindu Parishad. Sangh organisations were no longer consulted or informed in advance about Modi's administrative decisions. Nonetheless, Modi retained connections with some Hindu nationalists. Modi wrote a foreword to a textbook by Dinanath Batra released in 2014, which stated that ancient India possessed technologies including test-tube babies.

Modi's relationship with Muslims continued to attract criticism. Prime Minister Atal Bihari Vajpayee (who asked Modi for tolerance in the aftermath of the 2002 Gujarat violence and supported his resignation as chief minister) distanced himself, reaching out to North Indian Muslims before the 2004 Lok Sabha elections. After the elections Vajpayee called the violence in Gujarat a reason for the BJP's electoral defeat and said it had been a mistake to leave Modi in office after the riots.

Questions about Modi's relationship with Muslims were also raised by many Western nations during his tenure as chief

minister. Modi was barred from entering the United States by the State Department, in accordance with the recommendations of the Commission on International Religious Freedom formed under the aegis of the International Religious Freedom Act, the only person denied a US visa under this law. The UK and the European Union refused to admit him because of what they saw as his role in the riots. As Modi rose to prominence in India, the UK and the EU lifted their bans in October 2012 and March 2013, respectively, and after his election as prime minister he was invited to Washington.

During the run-up to the 2007 Gujarat Legislative Assembly election and the 2009 Indian general election, the BJP intensified its rhetoric on terrorism. In July 2006, Modi criticised Prime Minister Manmohan Singh " for his reluctance to revive anti-terror legislation" such as the 2002 Prevention of Terrorism Act. He asked the national government to allow states to invoke tougher laws in the wake of the 2006 Mumbai train bombings. In 2007 Modi authored *Karmayog*, a 101-page booklet discussing manual scavenging.

In it, Modi argued that scavenging was a "spiritual experience" for Valmiks, a sub-caste of Dalits. However, this book was not circulated that time because of the election code of conduct. After the November 2008 Mumbai attacks, Modi held a meeting to discuss the security of Gujarat's 1,600-kilometre (990 mi)-long coastline, resulting in government authorisation of 30 high-speed surveillance boats. In July 2007 Modi completed 2,063 consecutive days as chief minister of Gujarat, making him the longest-serving holder of that post, and the BJP won 122 of 182 state-assembly seats in that year's election.

Development projects

As Chief Minister, Modi favoured privatisation and small government, which was at odds with the philosophy of the RSS, usually described as anti-privatisation and anti-globalisation. His policies during his second term have been credited with reducing corruption in the state. He established financial and technology parks in Gujarat and during the 2007 Vibrant Gujarat summit, real-estate investment deals worth ₹6.6 trillion were signed.

The governments led by Patel and Modi supported NGOs and communities in the creation of groundwater-conservation projects. By December 2008, 500,000 structures had been built, of which 113,738 were check dams, which helped recharge the aquifers beneath them. Sixty of the 112 tehsils which had depleted the water table in 2004 had regained their normal groundwater levels by 2010. As a result, the state's production of genetically modified cotton increased to become the largest in India.

The boom in cotton production and its semi-arid land use led to Gujarat's agricultural sector growing at an average rate of 9.6 percent from 2001 to 2007. Public irrigation measures in central and southern Gujarat, such as the Sardar Sarovar Dam, were less successful. The Sardar Sarovar project only irrigated 4–6% of the area intended. Nonetheless, from 2001 to 2010 Gujarat recorded an agricultural growth rate of 10.97 percent – the highest of any state. However, sociologists have pointed out that the growth rate under the 1992–97 INC government was 12.9 percent. In 2008 Modi offered land in Gujarat to Tata Motors to set up a plant manufacturing the

Nano after a popular agitation had forced the company to move out of West Bengal. Several other companies followed the Tata to Gujarat.

The Modi government finished the process of bringing electricity to every village in Gujarat that its predecessor had almost completed. Modi significantly changed the state's system of power distribution, greatly impacting farmers. Gujarat expanded the Jyotigram Yojana scheme, in which agricultural electricity was separated from other rural electricity; the agricultural electricity was rationed to fit scheduled irrigation demands, reducing its cost. Although early protests by farmers ended when those who benefited found that their electricity supply had stabilised, according to an assessment study corporations and large farmers benefited from the policy at the expense of small farmers and labourers.

Development debate

A contentious debate surrounds the assessment of Gujarat's economic development during Modi's tenure as chief minister. The state's GDP growth rate averaged 10% during Modi's tenure, a value similar to other highly industrialised states, and above that of the country as a whole. Gujarat also had a high rate of economic growth in the 1990s, before Modi took office, and scholars have stated that growth did not accelerate during Modi's tenure. Under Modi, Gujarat topped the World Bank's "ease of doing business" rankings among Indian states for two consecutive years. In 2013, Gujarat was ranked first among Indian states for "economic freedom" by a report measuring governance, growth, citizens' rights and labour and business regulation among the country's 20 largest states. In

the later years of Modi's government, Gujarat's economic growth was frequently used as an argument to counter allegations of communalism. Tax breaks for businesses were easier to obtain in Gujarat than in other states, as was land. Modi's policies to make Gujarat attractive for investment included the creation of Special Economic Zones, where labour laws were greatly weakened.

Despite its growth rate, Gujarat had a relatively poor record on human development, poverty relief, nutrition and education during Modi's tenure. In 2013, Gujarat ranked 13th in the country with respect to rates of poverty and 21st in education. Nearly 45 percent of children under five were underweight and 23 percent were undernourished, putting the state in the "alarming" category on the India State Hunger Index. A study by UNICEF and the Indian government found that Gujarat under Modi had a poor record with respect to immunisation in children.

Over the decade from 2001 to 2011, Gujarat did not change its position relative to the rest of the country with respect to poverty and female literacy, remaining near the median of the 29 Indian states. It showed only a marginal improvement in rates of infant mortality, and its position with respect to individual consumption declined. With respect to the quality of education in government schools, the state ranked below most Indian states. The social policies of the government generally did not benefit Muslims, Dalits, and Adivasis, and generally increased social inequalities. Development in Gujarat was generally limited to the urban middle class, and citizens in rural areas or from lower castes were increasingly marginalised. In 2013 the state ranked 10th of 21 Indian

states in the Human Development Index. Under Modi, the state government spent far less than the national average on education and healthcare.

Final years

- Despite the BJP's shift away from explicit Hindutva, Modi's election campaign in 2007 and 2012 contained elements of Hindu nationalism. Modi only attended Hindu religious ceremonies, and had prominent associations with Hindu religious leaders. During his 2012 campaign he twice refused to wear articles of clothing gifted by Muslim leaders. He did, however, maintain relations with Dawoodi Bohra. His campaign included references to issues known to cause religious polarisation, including to Afzal Guru and the killing of Sohrabuddin Sheikh. The BJP did not nominate any Muslim candidates for the assembly election of 2012. During the 2012 campaign, Modi attempted to identify himself with the state of Gujarat, a strategy similar to that used by Indira Gandhi during the Emergency, and projected himself as protecting Gujarat against persecution by the rest of India.

While campaigning for the 2012 assembly elections, Modi made extensive use of holograms and other technologies allowing him to reach a large number of people, something he would repeat in the 2014 general election. In the 2012 Gujarat Legislative Assembly elections, Modi won the constituency of Maninagar by 86,373 votes over Shweta Bhatt, the INC candidate and wife of Sanjiv Bhatt. The BJP won 115 of the 182 seats, continuing

its majority during his tenure and allowing the party to form the government (as it had in Gujarat since 1995). In later by-elections the BJP won four more assembly seats and two Lok Sabha seats held by the INC, although Modi did not campaign for its candidates. In 2013, the Wharton India Economic Forum (WIEF) at the Wharton School of the University of Pennsylvania cancelled a keynote video-conference speech by Modi following protests by Indian-Americans.

After his election as prime minister, Modi resigned as the chief minister and as an MLA from Maninagar on 21 May 2014. Anandiben Patel succeeded him as the chief minister.

Premiership campaigns

2014 Indian general election

- In September 2013 Modi was named the BJP's candidate for prime minister ahead of the 2014 Lok Sabha election. Several BJP leaders expressed opposition to Modi's candidature, including BJP founding member L. K. Advani, who cited concern with leaders who were "concerned with their personal agendas". Modi played a dominant role in the BJP's election campaign. Several people who voted for the BJP stated that if Modi had not been the prime-ministerial candidate, they would have voted for another party. The focus on Modi as an individual was unusual for a BJP election campaign. The election was described as a referendum on Narendra Modi.

During the campaign, Modi focused on the corruption scandals under the previous INC government, and played on his image as a politician who had created a high rate of GDP growth in Gujarat. Modi projected himself as a person who could bring about "development," without focus on any specific policies. His message found support among young Indians and among middle-class citizens.

The BJP under Modi was able to downplay concerns about the protection of religious minorities and Modi's commitment to secularism, areas in which he had previously received criticism. Prior to the election Modi's image in the media had centered around his role in the 2002 Gujarat riots, but during the campaign the BJP was able to shift this to a focus on Modi's neoliberal ideology and the Gujarat model of development, although Hindutva remained a significant part of its campaign. The BJP's campaign was assisted by its wide influence in the media. Modi's campaign blitz cost approximately ₹50 billion (US$700 million), and received extensive financial support from corporate donors. In addition to more conventional campaign methods, Modi made extensive use of social media, and addressed more than 1000 rallies via hologram appearances.

The BJP won 31% of the vote, and more than doubled its tally in the Lok Sabha to 282, becoming the first party to win a majority of seats on its own since 1984. Voter dissatisfaction with the INC, as well as with regional parties in North India, was another reason for the success of the BJP, as was the support from the RSS. In states such as Uttar Pradesh in which the BJP performed well, it drew exceptionally high support from upper-caste Hindus, although the 10 percent of

Muslim votes won was more than it had won before. It performed particularly well in parts of the country that had recently experienced violence between Hindus and Muslims. The magnitude of the BJP's victory led many commentators to say that the election constituted a political realignment away from progressive parties and towards the right-wing. Modi's tweet announcing his victory was described as being emblematic of the political realignment away from a secular, socialist state towards capitalism and Hindu cultural nationalism.

Modi himself was a candidate for the Lok Sabha in two constituencies: Varanasi and Vadodara. He won in both constituencies, defeating Aam Aadmi Party leader Arvind Kejriwal in Varanasi and Madhusudan Mistry of the INC in Vadodara by 570,128 votes.

Modi, who was unanimously elected leader of the BJP, was appointed prime minister by India's president. To comply with the law that an MP cannot represent more than one constituency, he vacated the Vadodara seat.

2019 Indian general election

On 13 October 2018, Modi was renamed as the BJP candidate for prime minister for the 2019 general election. The chief campaigner for the party was BJP's president Amit Shah. Modi launched the Main Bhi Chowkidar campaign ahead of the general election. In the year 2018, end Party's, second-biggest alliance Telugu Desam Party split from NDA over the matter of special-status for Andhra Pradesh.

The campaign was started by Amit Shah on 8 April 2019. In the campaign, Modi was targeted by the opposition on corruption allegations over Rafale deal with France government.

Highlighting this controversy the campaign "Chowkidar Chor Hai" was started, which was contrary to "Main Bhi Chowkidar" slogan. Modi made defence and national security among the foremost topics for the election campaign, especially after Pulwama attack, and the retaliatory attack of Balakot airstrike was counted as an achievement of the Modi administration. Other topics in the campaign were development and good foreign relations in the first premiership.

Modi contested the Lok Sabha elections as a candidate from Varanasi. He won the seat by defeating Shalini Yadav of the Samajwadi Party, who fought on SP-BSP alliance by a margin of 479,505 votes.

Modi was unanimously appointed the prime minister for a second time by the National Democratic Alliance, after the alliance won the election for the second time by securing 353 seats in the Lok Sabha with the BJP alone won 303 seats.

Prime Minister

After the Bharatiya Janata Party led National Democratic Alliance won a landslide in the 2014 Lok Sabha election, Narendra Modi was sworn in as the Prime Minister of India on 26 May 2014. He became the first Prime Minister born after India's independence from the British Empire in 1947. Modi started his second term after the Bharatiya Janata Party led

National Democratic Alliance won again in the 2019 Lok Sabha election. Modi became the 4th longest serving Prime Minister of India and the longest serving Non-Congress Prime Minister in 2020.

- For a chronological guide to this subject, see Timeline of the premiership of Narendra Modi.

Governance and other initiatives

- Modi's first year as prime minister saw significant centralisation of power relative to previous administrations. His efforts at centralisation have been linked to an increase in the number of senior administration officials resigning their positions. Initially lacking a majority in the Rajya Sabha, or upper house of Indian Parliament, Modi passed a number of ordinances to enact his policies, leading to further centralisation of power. The government also passed a bill increasing the control that it had over the appointment of judges, and reducing that of the judiciary.

In December 2014 Modi abolished the Planning Commission, replacing it with the National Institution for Transforming India, or NITI Aayog. The move had the effect of greatly centralising the power previously with the planning commission in the person of the prime minister. The planning commission had received heavy criticism in previous years for creating inefficiency in the government, and of not filling its role of improving social welfare: however, since the economic

liberalisation of the 1990s, it had been the major government body responsible for measures related to social justice.

The Modi government launched investigations by the Intelligence Bureau against numerous civil society organisations and foreign non-governmental organisations in the first year of the administration. The investigations, on the grounds that these organisations were slowing economic growth, was criticised as a witch-hunt. International humanitarian aid organisation Medecins Sans Frontieres was among the groups that were put under pressure. Other organisations affected included the Sierra Club and Avaaz. Cases of sedition were filed against individuals criticising the government. This led to discontent within the BJP regarding Modi's style of functioning and drew comparisons to the governing style of Indira Gandhi.

Modi repealed 1,200 obsolete laws in first three years as prime minister; a total of 1,301 such laws had been repealed by previous governments over a span of 64 years. He started a monthly radio programme titled "Mann Ki Baat" on 3 October 2014. Modi also launched the Digital India programme, with the goal of ensuring that government services are available electronically, building infrastructure to provide high-speed Internet access to rural areas, boosting manufacturing of electronic goods in the country, and promoting digital literacy.

Modi launched Ujjwala scheme to provide free LPG connection to rural households. The scheme led to an increase in LPG consumption by 56% in 2019 as compared to 2014. In 2019, a law was passed to provide 10% reservation to Economically weaker sections.

He was again sworn in as Prime minister on 30 May 2019. On 30 July 2019, Parliament of India declared the practice of Triple Talaq as illegal, unconstitutional and made it punishable act from 1 August 2019 which is deemed to be in effect from 19 September 2018. On 5 August 2019, the government moved resolution to scrap Article 370 in the Rajya Sabha, and also reorganise the state with Jammu and Kashmir serving as one of the union territory and Ladakh region separated out as a separate union territory.

Under Modi's tenure, India has experienced democratic backsliding. According to one study, "The BJP government incrementally but systemically attacked nearly all existing mechanisms that are in place to hold the political executive to account, either by ensuring that these mechanisms became subservient to the political executive or were captured by party loyalists." Scholars also point to how he Modi government has used state power to intimidate and stifle critics in the media and academia, thus undermining freedom of expression and alternative sources of information. Reporters Without Borders in 2021 characterised Modi as a predator for curbing press freedom in India since 2014.

Economic policy

The economic policies of Modi's government focused on privatisation and liberalisation of the economy, based on a neoliberal framework. Modi liberalised India's foreign direct investment policies, allowing more foreign investment in several industries, including in defence and the railways. Other proposed reforms included making it harder for workers to form unions and easier for employers to hire and fire them;

some of these proposals were dropped after protests. The reforms drew strong opposition from unions: on 2 September 2015, eleven of the country's largest unions went on strike, including one affiliated with the BJP. The Bharatiya Mazdoor Sangh, a constituent of the Sangh Parivar, stated that the underlying motivation of labour reforms favoured corporations over labourers.

The funds dedicated to poverty reduction programmes and social welfare measures were greatly decreased by the Modi administration. The money spent on social programmes declined from 14.6% of GDP during the Congress government to 12.6% during Modi's first year in office. Spending on health and family welfare declined by 15%, and on primary and secondary education by 16%. The budgetary allocation for the Sarva Shiksha Abhiyan, or the "education for all" programme, declined by 22%. The government also lowered corporate taxes, abolished the wealth tax, increased sales taxes, and reduced customs duties on gold, and jewellery. In October 2014, the Modi government deregulated diesel prices.

In September 2014, Modi introduced the Make in India initiative to encourage foreign companies to manufacture products in India, with the goal of turning the country into a global manufacturing hub. Supporters of economic liberalisation supported the initiative, while critics argued it would allow foreign corporations to capture a greater share of the Indian market. Modi's administration passed a land-reform bill that allowed it to acquire private agricultural land without conducting a social impact assessment, and without the consent of the farmers who owned it. The bill was passed via an executive order after it faced opposition in parliament, but

was eventually allowed to lapse. Modi's government put in place the Goods and Services Tax, the biggest tax reform in the country since independence. It subsumed around 17 different taxes and became effective from 1 July 2017.

In his first cabinet decision, Modi set up a team to investigate black money. On 9 November 2016, the government demonetised ₹500 and ₹1000 banknotes, with the stated intention of curbing corruption, black money, the use of counterfeit currency, and terrorism. The move led to severe cash shortages, a steep decline in the Indian stock indices BSE SENSEX and NIFTY 50, and sparked widespread protests throughout the country. Several deaths were linked to the rush to exchange cash. In the subsequent year, the number of income tax returns filed for individuals rose by 25%, and the number of digital transactions increased steeply.

Over the first four years of Modi's premiership, India's GDP grew at an average rate of 7.23%, higher than the rate of 6.39% under the previous government. The level of income inequality increased, while an internal government report said that in 2017, unemployment had increased to its highest level in 45 years. The loss of jobs was attributed to the 2016 demonetisation, and to the effects of the Goods and Services Tax.

In the next year, after 2018, Indian economy started a gradual recovery with a GDP growth of 6.12% in 2018-19 FY, with an inflation rate of 3.4%. Same year, India was successful in making a good economy in trade and manufacturing sector. While in the FY of 2019–20, due to the general election, Modi government focused more on their election campaign. In the

year 2019–20, the GDP growth rate was 4.18% and inflation rate also increased to 4.7% from 3.4% in the previous year. Though being high unemployment, increase in inflation rate and budget deficiency, Modi's leadership won in 2019 elections.

Due to the COVID-19 pandemic, numerous rating agencies downgraded India's GDP predictions for FY21 to negative figures, signalling a recession in India, the most severe since 1979. According to a Dun & Bradstreet report, the country is likely to suffer a recession in the third quarter of FY2020 as a result of the over 2-month long nation-wide lockdown imposed to curb the spread of COVID-19. This was also accompanied by the mass migration of migrant workers.

Health and sanitation

- In his first year as prime minister, Modi reduced the amount of money spent by the central government on healthcare. The Modi government launched New Health Policy (NHP) in January 2015. The policy did not increase the government's spending on healthcare, instead emphasising the role of private healthcare organisations. This represented a shift away from the policy of the previous Congress government, which had supported programmes to assist public health goals, including reducing child and maternal mortality rates. The National Health Mission, which included public health programmes targeted at these indices received nearly 20% less funds in 2015 than in the previous year. 15 national health programmes, including those aimed at

controlling tobacco use and supporting healthcare for the elderly, were merged with the National Health Mission. In its budget for the second year after it took office, the Modi government reduced healthcare spending by 15%. The healthcare budget for the following year rose by 19%. The budget was viewed positively by private insurance providers. Public health experts criticised its emphasis on the role of private healthcare providers, and suggested that it represented a shift away from public health facilities. The healthcare budget rose by 11.5% in 2018; the change included an allocation of 2000 crore for a government-funded health insurance program, and a decrease in the budget of the National Health Mission. The government introduced stricter packaging laws for tobacco which requires 85% of the packet size to be covered by pictorial warnings. An article in the medical journal *Lancet* stated that the country "might have taken a few steps back in public health" under Modi. In 2018 Modi launched the Ayushman Bharat Yojana, a government health insurance scheme intended to insure 500 million people. 100,000 people had signed up by October 2018.

Modi emphasised his government's efforts at sanitation as a means of ensuring good health. On 2 October 2014, Modi launched the Swachh Bharat Mission ("Clean India") campaign. The stated goals of the campaign included eliminating open defecation and manual scavenging within five years. As part of the programme, the Indian government began constructing millions of toilets in rural areas and encouraging people to use

them. The government also announced plans to build new sewage treatment plants. The administration plans to construct 60 million toilets by 2019. The construction projects have faced allegations of corruption, and have faced severe difficulty in getting people to use the toilets constructed for them. Sanitation cover in the country increased from 38.7% in October 2014 to 84.1% in May 2018; however, usage of the new sanitary facilities lagged behind the government's targets. In 2018, the World Health Organization stated that at least 180,000 diarrhoeal deaths were averted in rural India after the launch of the sanitation effort.

Hindutva

During the 2014 election campaign, the BJP sought to identify itself with political leaders known to have opposed Hindu nationalism, including B. R. Ambedkar, Subhas Chandra Bose, and Ram Manohar Lohia. The campaign also saw the use of rhetoric based on Hindutva by BJP leaders in certain states. Communal tensions were played upon especially in Uttar Pradesh and the states of Northeast India. A proposal for the controversial Uniform Civil Code was a part of the BJP's election manifesto.

The activities of a number of Hindu nationalist organisations increased in scope after Modi's election as Prime Minister, sometimes with the support of the government. These activities included a Hindu religious conversion programme, a campaign against the alleged Islamic practice of "Love Jihad", and attempts to celebrate Nathuram Godse, the assassin of Mahatma Gandhi, by members of the right wing Hindu

Mahasabha. Officials in the government, including the Home Minister, defended the conversion programmes.

Links between the BJP and the RSS grew stronger under Modi. The RSS provided organisational support to the BJP's electoral campaigns, while the Modi administration appointed a number of individuals affiliated with the RSS to prominent government positions. In 2014, Yellapragada Sudershan Rao, who had previously been associated with the RSS, became the chairperson of the Indian Council of Historical Research (ICHR). Historians and former members of the ICHR, including those sympathetic to the BJP, questioned his credentials as a historian, and stated that the appointment was part of an agenda of cultural nationalism.

The North East Delhi riots, which left more than 40 dead and hundreds injured, were triggered by protests against a citizenship law seen by many critics as anti-Muslim and part of Modi's Hindu nationalist agenda. On 5 August 2020, Modi visited Ayodhya after the Supreme Court in 2019 ordered a contested land in Ayodhya to be handed over to a trust to build the Hindu temple and ordered the government to give alternate 5 acre land to Sunni Waqf Board for the purpose of building a mosque. He became the first prime minister to visit Ram Janmabhoomi and Hanuman Garhi.

Foreign policy

Foreign policy played a relatively small role in Modi's election campaign, and did not feature prominently in the BJP's election manifesto. Modi invited all the other leaders of SAARC

countries to his swearing in ceremony as prime minister. He was the first Indian prime minister to do so.

Modi's foreign policy, similarly to that of the preceding INC government, focused on improving economic ties, security, and regional relations. Modi continued Manmohan Singh's policy of "multi-alignment." The Modi administration tried to attract foreign investment in the Indian economy from several sources, especially in East Asia, with the use of slogans such as "Make in India" and "Digital India". The government also tried to improve relations with Islamic nations in the Middle East, such as Bahrain, Iran, Saudi Arabia, and the United Arab Emirates, as well as with Israel.

The foreign relations of India with the USA also mended after Narendra Modi became the Prime Minister. During the run-up to the general election there was wide-ranging scepticism regarding future of the strategic bilateral relation under Modi's premiership as in 2005 he was, while Chief Minister of Gujarat, denied a U.S. visa during the Bush administration for his alleged poor human rights records. However sensing Modi's inevitable victory well before the election, the US Ambassador Nancy Powell had reached out to him as part of greater rapprochement from the west. Moreover, following his 2014 election as the Prime Minister of India President Obama congratulated him over the telephone and invited him to visit the US. Modi government has been successful in making good foreign relations with the USA in the presidency of both Barack Obama and Donald Trump.

During the first few months after the election, Modi made trips to a number of different countries to further the goals of his

policy, and attended the BRICS, ASEAN, and G20 summits. One of Modi's first visits as prime minister was to Nepal, during which he promised a billion USD in aid. Modi also made several overtures to the United States, including multiple visits to that country. While this was described as an unexpected development, due to the US having previously denied Modi a travel visa over his role during the 2002 Gujarat riots, it was also expected to strengthen diplomatic and trade relations between the two countries.

In 2015, the Indian parliament ratified a land exchange deal with Bangladesh about the India–Bangladesh enclaves, which had been initiated by the government of Manmohan Singh. Modi's administration gave renewed attention to India's "Look East Policy", instituted in 1991. The policy was renamed the "Act East Policy", and involved directing Indian foreign policy towards East Asia and Southeast Asia. The government signed agreements to improve land connectivity with Myanmar, through the state of Manipur. This represented a break with India's historic engagement with Myanmar, which prioritised border security over trade. China–India relations have deteriorated rapidly following the 2020 China–India skirmishes. Modi has pledged aid of $900 million to Afghanistan, visited the nation twice and been honoured with the nation's highest civilian honour in 2016.

Defence policy

India's nominal military spending increased steadily under Modi. The military budget declined over Modi's tenure both as a fraction of GDP and when adjusted for inflation. A substantial portion of the military budget was devoted to

personnel costs, leading commentators to write that the budget was constraining Indian military modernisation.

The BJP election manifesto had also promised to deal with illegal immigration into India in the Northeast, as well as to be more firm in its handling of insurgent groups. The Modi government issued a notification allowing Hindu, Sikh, and Buddhist illegal immigrants from Pakistan and Bangladesh to legalise their residency in India. The government described the measure as being taken for humanitarian reasons but it drew criticism from several Assamese organisations.

The Modi administration negotiated a peace agreement with the largest faction of the National Socialist Council of Nagaland (NSCM), which was announced in August 2015. The Naga insurgency in northeast India had begun in the 1950s. The NSCM and the government had agreed to a ceasefire in 1997, but a peace accord had not previously been signed. In 2015 the government abrogated a 15-year ceasefire with the Khaplang faction of the NSCM (NSCM-K). The NSCM-K responded with a series of attacks, which killed 18 people. The Modi government carried out a raid across the border with Myanmar as a result, and labelled the NSCM-K a terrorist organisation.

Modi promised to be "tough on Pakistan" during his election campaign, and repeatedly stated that Pakistan was an exporter of terrorism. On 29 September 2016, the Indian Army stated that it had conducted a surgical strike on terror launch pads in Azad Kashmir. The Indian media claimed that up to 50 terrorists and Pakistani soldiers had been killed in the strike. Pakistan initially denied that any strikes had taken place. Subsequent reports suggested that Indian claim about the

scope of the strike and the number of casualties had been exaggerated, although cross-border strikes had been carried out. In February 2019 India carried out airstrikes in Pakistan against a supposed terrorist camp. Further military skirmishes followed, including cross-border shelling and the loss of an Indian aircraft.

Following his victory in 2019 Lok Sabha elections, he focused more on Defence policies of India, especially against China and Pakistan. On 5 May 2020, Chinese and Indian troops engaged in aggressive melee, face-offs and skirmishes at locations along the Sino-Indian border, including near the disputed Pangong Lake in Ladakh and the Tibet Autonomous Region, and near the border between Sikkim and the Tibet Autonomous Region. Additional clashes also took place at locations in eastern Ladakh along the Line of Actual Control (LAC). After which there was start of skirmishes between the nations leading to many border clashes, responses and reactions from both sides. A series of talks were also held between the two by both military and diplomatic means for peace. The first border clash reported in 2021 was on 20 January, referred to as a minor border clash in Sikkim.

Environmental policy

In naming his cabinet, Modi renamed the "Ministry of Environment and Forests" the "Ministry of Environment, Forests, and Climate Change." In the first budget of the government, the money allotted to this ministry was reduced by more than 50%. The new ministry also removed or diluted a number of laws related to environmental protection. These included no longer requiring clearance from the National Board

for Wildlife for projects close to protected areas, and allowing certain projects to proceed before environmental clearance was received. The government also tried to reconstitute the Wildlife board such that it no longer had representatives from non-governmental organisations: however, this move was prevented by the Supreme Court.

During his premiership various government initiatives were taken to protect endangered wildlife species like tigers, elephants and dolphins. Modi in November 2015 launched the International Solar Alliance in India–Africa Forum Summit for better solar power utilization.

Modi also relaxed or abolished a number of other environmental regulations, particularly those related to industrial activity. A government committee stated that the existing system only served to create corruption, and that the government should instead rely on the owners of industries to voluntarily inform the government about the pollution they were creating. Other changes included reducing ministry oversight on small mining projects, and no longer requiring approval from tribal councils for projects inside forested areas. In addition, Modi lifted a moratorium on new industrial activity in the most polluted areas in the countries. The changes were welcomed by businesspeople, but criticised by environmentalists.

Under the UPA government that preceded Modi's administration, field trials of Genetically Modified (GM) crops had essentially been put on hold, after protests from farmers fearing for their livelihoods. Under the Modi government these restrictions were gradually lifted. The government received

some criticism for freezing the bank accounts of environmental group Greenpeace, citing financial irregularities, although a leaked government report said that the freeze had to do with Greenpeace's opposition to GM crops.

Democratic backsliding

Under Modi's tenure, India has experienced democratic backsliding. According to one study, "The BJP government incrementally but systemically attacked nearly all existing mechanisms that are in place to hold the political executive to account, either by ensuring that these mechanisms became subservient to the political executive or were captured by party loyalists." Scholars also point to how the Modi government has used state power to intimidate and stifle critics in the media and academia, thus undermining freedom of expression and alternative sources of information. There have been several reports of the Modi government to be as an Authoritarian conservative government, even due to lack of good opposition.

Personal life and image

Personal life

In accordance with Ghanchi tradition, Modi's marriage was arranged by his parents when he was a child. He was engaged at age 13 to Jashodaben Modi, marrying her when he was 18. They spent little time together and grew apart when Modi began two years of travel, including visits to Hindu ashrams. Reportedly, their marriage was never consummated, and he kept it a secret because otherwise he could not have become a 'pracharak' in the puritan Rashtriya Swayamsevak Sangh. Modi

kept his marriage secret for most of his career. He acknowledged his wife for the first time when he filed his nomination for the 2014 general elections. Modi maintains a close relationship with his mother, Hiraben.

A vegetarian and teetotaler, Modi has a frugal lifestyle and is a workaholic and introvert. Modi's 31 August 2012 post on Google Hangouts made him the first Indian politician to interact with citizens on a live chat. Modi has also been called a fashion-icon for his signature crisply ironed, half-sleeved *kurta*, as well as for a suit with his name embroidered repeatedly in the pinstripes that he wore during a state visit by US President Barack Obama, which drew public and media attention and criticism. Modi's personality has been variously described by scholars and biographers as energetic, arrogant, and charismatic.

He had published a Gujarati book titled *Jyotipunj* in 2008, containing profiles of various RSS leaders. The longest was of M. S. Golwalkar, under whose leadership the RSS expanded and whom Modi refers to as *Pujniya Shri Guruji* ("Guru worthy of worship"). According to *The Economic Times*, his intention was to explain the workings of the RSS to his readers and to reassure RSS members that he remained ideologically aligned with them. Modi authored eight other books, mostly containing short stories for children.

The nomination of Modi for the prime ministership drew attention to his reputation as "one of contemporary India's most controversial and divisive politicians." During the 2014 election campaign the BJP projected an image of Modi as a strong, masculine leader, who would be able to take difficult

decisions. Campaigns in which he has participated have focused on Modi as an individual, in a manner unusual for the BJP and RSS. Modi has relied upon his reputation as a politician able to bring about economic growth and "development". Nonetheless, his role in the 2002 Gujarat riots continues to attract criticism and controversy. Modi's hardline Hindutva philosophy and the policies adopted by his government continue to draw criticism, and have been seen as evidence of a majoritarian and exclusionary social agenda. In March 2021, Modi received his first COVID-19 vaccine dose at the All India Institute of Medical Sciences, New Delhi.

Approval ratings

As a Prime Minister, Modi has received consistently high approval ratings; at the end of his first year in office, he received an overall approval rating of 87% in a Pew Research poll, with 68% of people rating him "very favorably" and 93% approving of his government. His approval rating remained largely consistent at around 74% through his second year in office, according to a nationwide poll conducted by instaVaani. At the end of his second year in office, an updated Pew Research poll showed Modi continued to receive high overall approval ratings of 81%, with 57% of those polled rating him "very favorably."

At the end of his third year in office, a further Pew Research poll showed Modi with an overall approval rating of 88%, his highest yet, with 69% of people polled rating him "very favorably." A poll conducted by *The Times of India* in May 2017 showed 77% of the respondents rated Modi as "very good" and "good". In early 2017, a survey from Pew Research Center

showed Modi to be the most popular figure in Indian politics. In a weekly analysis by Morning Consult called the Global Leader Approval Rating Tracker, Modi had the highest net approval rating as of 22 December 2020 of all government leaders in the 13 countries being tracked.

Awards and recognition

In March 2012 and June 2014, Modi appeared on the cover of the Asian edition of *Time Magazine*, one of the few Indian politicians to have done so. He was awarded Indian of the Year by *CNN-News18* (formally *CNN-IBN*) news network in 2014. In June 2015, Modi was featured on the cover of Time Magazine. In 2014, 2015, 2017 and 2020, he was named one of Time magazine's 100 Most Influential People in the World. *Forbes Magazine* ranked him the 15th Most Powerful Person in the World in 2014 and the 9th Most Powerful Person in the World in 2015, 2016 and 2018. In 2015, Modi was ranked the 13th Most Influential Person in the World by *Bloomberg Markets Magazine*. Modi was ranked fifth on *Fortune Magazine*'s first annual list of the "World's Greatest Leaders" in 2015. In 2017, Gallup International Association (GIA) conducted a poll and ranked Modi as third top leader of the world. In 2016, a wax statue of Modi was unveiled at Madame Tussauds wax museum in London.

In 2015 he was named one of *Time*'s "30 Most Influential People on the Internet" as the second-most-followed politician on Twitter and Facebook. In 2018 he was the third most followed world leader on Twitter, and the most followed world leader on Facebook and Instagram. In October 2018, Modi received United Nations's highest environmental award, the

'Champions of the Earth', for policy leadership by "pioneering work in championing" the International Solar Alliance and "new areas of levels of cooperation on environmental action". He was conferred the 2018 Seoul Peace Prize in recognition of "his dedication to improving international co-operation, raising global economic growth, accelerating the Human Development of the people of India by fostering economic growth and furthering the development of democracy through anti-corruption and social integration efforts". He is the first Indian to win the award.

Following his second swearing-in ceremony as Prime Minister of India, a picture of Modi was displayed on the facade of the ADNOC building in Abu Dhabi, United Arab Emirates. Premiered on 12 August 2019, Modi appeared in a special episode of Discovery Channel's show *Man vs Wild* with the host Bear Grylls, becoming the second world leader after Barack Obama to appear in the adventure/survival show. In the show he trekked the jungles and talked about nature and wildlife conservation with Grylls. The episode was shot in Jim Corbett National Park, Uttarakhand and was broadcast in 180 countries along India.

The Texas India Forum hosted a community event in honour of Modi on 22 September 2019 at the NRG Stadium in Houston, Texas. The event was attended by over 50,000 people and several American politicians including President Donald Trump, making it the largest gathering for an invited foreign leader visiting the United States other than the Pope. At the same event, Modi was presented with the Key to the City of Houston by Mayor Sylvester Turner. He was awarded the Global Goalkeeper Award on 24 September 2019 in New York

City by the Bill & Melinda Gates Foundation in recognition for the Swachh Bharat Mission and "the progress India has made in providing safe sanitation under his leadership".

In 2020, Modi was among eight world leaders awarded the parodic Ig Nobel Prize in Medical Education "for using the COVID-19 viral pandemic to teach the world that politicians can have a more immediate effect on life and death than scientists and doctors can".

On 21 December 2020, President Donald Trump awarded Modi with the Legion of Merit for elevating the India–United States relations. The Legion of Merit was awarded to Modi along with Prime Minister of Australia Scott Morrison and former Prime Minister of Japan Shinzo Abe, the "original architects" of the QUAD.

On 24 February 2021, the largest cricket stadium in the world at Ahmedabad was renamed Narendra Modi Stadium by the Gujarat Cricket Association.

In popular culture

Modi Kaka Ka Gaon, a 2017 Indian Hindi-language drama film by Tushar Amrish Goel is the first biopic on Modi, starring Vikas Mahante in the titular role it was made halfway into his first-term as the prime minister which is shown in the film. *PM Narendra Modi,* a 2019 Indian Hindi-language biographical drama film by Omung Kumar, starred Vivek Oberoi in the titular role and covers his rise to prime ministership.An Indian web series, *Modi: Journey of a Common Man*, based on the same premise released in May 2019 on Eros Now with Ashish

Sharma portraying Modi. *Hu Narender Modi Banva Mangu Chu* is a 2018 Indian Gujarati-language drama film by Anil Naryani about the aspirations of a young boy who wants to become like Narendra Modi.

7 RCR (*7, Race Course Road*), a 2014 Indian docudrama political television series which charts the political careers of prominent Indian politicians, covered Modi's rise to the PM's office in the episodes - "Story Of Narendra Modi From 1950 To 2001", "Story Of Narendra Modi In Controversial Years From 2001 To 2013", "Truth Behind Brand Modi", "Election Journey Of Narendra Modi To 7 RCR", and "Masterplan Of Narendra Modi's NDA Govt."; with Sangam Rai in the role of Modi.

Other portrayals of Modi include by Rajit Kapur in the film *Uri: The Surgical Strike* (2019) and Vikram Gokhale in the web-television series *Avrodh: The Siege Within* (2020) both based on the 2016 Uri attack and the following Indian surgical strikes. Pratap Singh played a character based on Modi in *Chand Bujh Gaya* (2005) which is set in the backdrop of the Gujarat riots.

Modi appeared in an episode - "Man vs. Wild with Bear Grylls and Prime Minister Modi" - of the reality television show *Man vs. Wild*, with Bear Grills, which was shot in the Jim Corbett National Park and aired on Discovery Channel. He has also appeared twice on the Indian television talk show *Aap Ki Adalat* before the 2009 and 2014 elections respectively.

Along with hosting the *Mann Ki Baat* monthly radio programme, on All India Radio, he has also conducted Pariksha Pe Charcha - a competition/discussion for students and the issues they face in examinations.

Chapter 31

Telangana, The State of Telangana was Officially Formed on 2 June 2014

- **Telangana** is a state in India situated on the south-central stretch of the Indian peninsula on the high Deccan Plateau. It is the eleventh-largest state and the twelfth-most populated state in India with a geographical area of 112,077 km (43,273 sq mi) and 35,193,978 residents as per 2011 census. On 2 June 2014, the area was separated from the northwestern part of Andhra Pradesh as the newly formed state with Hyderabad as its capital. Its other major cities include Warangal, Nizamabad, Khammam, Karimnagar and Ramagundam. Telangana is bordered by the states of Maharashtra to the north, Chhattisgarh to the east, Karnataka to the west, and Andhra Pradesh to the east and south. The terrain of Telangana region consists mostly of hills, mountain ranges, and thick dense forests covering an area of 27,292 km (10,538 sq mi). As of 2019, the state of Telangana is divided into 33 districts.

Throughout antiquity and the Middle Ages, the region now known as Telangana was ruled by multiple major Hindustani powers such as the Mauryans, Satavahanas, Vishnukundinas, Chalukyas, Cholas, Rashtrakutas, Kakatiyas, Delhi Sultanate,

Bahmani Sultanate, Golconda Sultanate. During the 16th and 17th centuries, the region was ruled by the Mughals of India. The region is known for its *Ganga-Jamuni tehzeeb* culture. During the 18th century and the British Raj, Telangana was ruled by the Nizam of Hyderabad. In 1823, the Nizams lost control over Northern Circars (Coastal Andhra) and Ceded Districts (Rayalseema), which were handed over to the East India Company. The annexation by the British of the Northern Circars deprived Hyderabad State, the Nizam's dominion, of the considerable coastline it formerly had, to that of a landlocked princely state with territories in the central Deccan, bounded on all sides by British India. Thereafter, the Northern Circars were governed as part of Madras Presidency until India's independence in 1947, after which the presidency became India's Madras state.

The Hyderabad state joined the Union of India in 1948 after an Indian military invasion. In 1956, the Hyderabad State was dissolved as part of the linguistic reorganisation of states and Telangana was merged with the Telugu-speaking Andhra State (part of the Madras Presidency during the British Raj) to form Andhra Pradesh. A peasant-driven movement began to advocate for separation from Andhra Pradesh starting in the early 1950s, and continued until Telangana was granted statehood on 2 June 2014 under the leadership of K. Chandrashekar Rao.

The economy of Telangana is the seventh-largest in India, with a gross state domestic product (GSDP) of ₹9.78 trillion (US$140 billion) and has the country's 6th-highest GSDP per capita of ₹227,000 (US$3,200). Telangana ranks 22nd among Indian states in human development index. The state has emerged as a major focus for robust IT software, industry and

services sector. The state is also the main administrative centre of many Indian defence aerospace and research labs like Bharat Dynamics Limited, Defence Metallurgical Research Laboratory, Defence Research and Development Organisation and Defence Research and Development Laboratory.

The cultural hearts of Telangana, Hyderabad and Warangal, are noted for their wealth and renowned historical structures – Charminar, Qutb Shahi Tombs, Falaknuma Palace, Chowmahalla Palace, Warangal Fort, Kakatiya Kala Thoranam, Thousand Pillar Temple, Ramappa Temple and the Bhongir Fort in Yadadri Bhuvanagiri district. The historic city Golconda in Hyderabad established itself as a diamond trading centre and, until the end of the 19th century, the Golconda market was the primary source of the finest and largest diamonds in the world. Thus, the legendary name Golconda Diamonds became synonymous with Golconda itself. Religious edifices like the Lakshmi Narasimha Temple in Yadadri Bhuvanagiri district, Makkah Masjid in Hyderabad, the ancient Bhadrakali Temple and Govinda Rajula Gutta in Warangal, Alampur Jogulamba Temple in Jogulamba Gadwal district and Medak Cathedral, Lord Shiva temple in Vemulawada of Rajanna-Siricilla district are several of its most famous places of worship.

Etymology

A popular etymology derives the word "Telangana" from *Trilinga desa* ("land of three lingas"), a region so-called because three important Shaivite shrines were located here: Kaleshwaram, Srisailam and Draksharama. According to Jayadhir Thirumala Rao, a former director of Andhra Pradesh Oriental Manuscripts Library and Research Centre, the name Telangana is of Gondi

origin. Rao asserts that it is derived from "Telangadh", which according to him, means "south" in Gondi and has been referred to in "Gond script dating back to about 2000 years".

One of the earliest uses of a word similar to Telangana can also be seen in a name of Malik Maqbul (14th century CE), who was called the *Tilangani*, which implies that he was from Telangana. He was the commander of the Warangal Fort (*Kataka Pāludu*).

A 16th-century travel writer, Firishta, recorded in his book:

During the just reign of Ibrahim Kootb Shah, *Tulingana*, like Egypt, became the mart of the whole world. Merchants from Toorkistan, Arabia, and Persia resorted to it; and they met with such encouragement that they found in it inducements to return frequently. The greatest luxuries from foreign parts daily abounded at the king's hospitable board.

The word "Telinga" changed over time to "Telangana" and the name "Telangana" was designated to distinguish the predominantly Telugu-speaking region of the erstwhile Hyderabad State from its predominantly Marathi-speaking one, Marathwada. After Asaf Jahis ceded the Seemandhra region to the British, the rest of the Telugu region retained the name Telangana and the other parts were called Madras Presidency's Circars and Ceded.

History

Telangana was governed by many rulers, including the Maurya Empire (320 BCE–180 BCE), Satavahana dynasty (180 BCE–

220 CE), Vakataka dynasty (250 CE–500 CE), Vishnukundina dynasty (420 CE–624 CE), Chalukya dynasty (543 CE–753 CE), Rashtrakuta dynasty (753 CE–982 CE), the Kakatiya dynasty (1083 CE–1323 CE), the Delhi Sultanate (1323 CE–1326 CE) , the Musunuri Nayaks (1326 CE–1356 CE), the Recherla Nayaks (1356 CE–1424 CE), the Bahmani Sultanate (1347 CE–1512 CE), Vijayanagara Empire (1336 CE–1646 CE), Qutb Shahi dynasty (1512 CE–1687 CE), Mughal Empire (1687 CE–1724 CE) and Asaf Jahi Dynasty (1724 CE–1948 CE).

Early history

The Satavahana dynasty (230 BCE–220 CE) became the dominant power in this region. It originated from the lands between the Godavari and Krishna rivers and was based at Amaravathi and Dharanikota. After the decline of the Satavahanas, various dynasties, such as the Vakataka, Vishnukundina, Chalukya, Rashtrakuta and Western Chalukya, ruled the area.

Kakatiya Dynasty

The Telangana area experienced its golden age during the reign of the Kakatiya dynasty, which ruled most parts of the present-day Andhra Pradesh and Telangana from 1083 to 1323 CE. Rudrama Devi and Prataparudra II were prominent rulers from the Kakatiya dynasty.

The dynasty weakened with the attack of Malik Kafur in 1309 and was dissolved after the defeat of Prataparudra by the forces of Muhammad bin Tughluq in 1323.

Qutab Shahi and Asaf Jahi's

The area came under the rule of the Delhi Sultanate in the 14th century, followed by the Bahmani Sultanate. Quli Qutb Mulk, a governor of Golconda, revolted against the Bahmani Sultanate and established the Qutb Shahi dynasty in 1518. On 21 September 1687, the Golconda Sultanate came under the rule of the Mughal emperor Aurangzeb after a year-long siege of the Golconda fort.

During the early seventeenth century a strong cotton-weaving industry existed in Telangana. Large quantities of cotton were produced for domestic and exports consumption. High quality plain and patterned cloth made of muslin and calico was produced.

In 1712, Qamar-ud-din Khan was appointed by emperor Farrukhsiyar as the viceroy of Deccan with the title *Nizam-ul-Mulk* (meaning "Administrator of the Realm"). He was later recalled to Delhi, with Mubariz Khan appointed as the viceroy. In 1724, Qamar-ud-din Khan defeated Mubariz Khan to reclaim the *Deccan suba,* establishing it as an autonomous province of the Mughal empire. He took the name *Asif Jah*, starting what came to be known as the Asaf Jahi dynasty. He named the area Hyderabad Deccan. Subsequent rulers retained the title *Nizam ul-Mulk* and were called Asif Jahi Nizams or nizams of Hyderabad. The Medak and Warangal divisions of Telangana were part of their realm.

When Asif Jah I died in 1748, there was political unrest due to contention for the throne among his sons, who were aided by opportunistic neighbouring states and colonial foreign forces.

In 1769, Hyderabad city became the formal capital of the Nizams. The Nizam Nasir-ud-dawlah, Asaf Jah IV signed the subsidiary alliance with the British in 1799 and lost its control over the state's defence and foreign affairs. Hyderabad State became a princely state among the presidencies and provinces of British India.

In 1787, heavy flooding killed over 20,000 causing a plague which killed about 10,656,000 Telugus again in Telangana.

Post-independence

When India became independent from the British Empire in 1947, the Nizam of Hyderabad did not want to merge with the Indian Union and wanted to remain independent. The Government of India annexed Hyderabad State on 17 September 1948 after a military operation called Operation Polo.

It appointed a civil servant, M. K. Vellodi, as first chief minister of Hyderabad State on 26 January 1950. He administered the state with the help of English-educated bureaucrats from the Madras and Bombay states, who were familiar with British systems of administration unlike the bureaucrats of Hyderabad State who used a completely different administrative system. The official language of the state was switched from Urdu to English.

In 1952, Dr. Burgula Ramakrishna Rao was elected chief minister of the Hyderabad State in its first democratic election. During this time, there were violent agitations by some Telanganites to send the Madras state bureaucrats back and implement a rule by the natives (*mulkis*) of Hyderabad (Syed

Alam Sharjil) was elected chief minister of Hyderabad after (Dr. Burgula Ramakrishana Rao) for one year after he resigned from the post.

Telangana Rebellion

The Telangana Rebellion was a peasant revolt supported by the communists. It originated in the Telangana regions of the Hyderabad State between 1946 and 1951, led by the Communist Party of India (CPI).

The revolt began in the Nalgonda district against the feudal lords of Reddy and Velama castes. It quickly spread to the Warangal and Bidar districts. Peasant farmers and labourers revolted against the local feudal landlords (*jagirdars* and *deshmukhs*) and later against the Nizam Osman Ali Khan. The violent phase of the movement ended after the government of India's Operation Polo. Starting in 1951, the CPI shifted to a more moderate strategy of seeking to bring communism to India within the framework of Indian democracy.

States Reorganisation Commission

In December 1953, the States Reorganisation Commission (SRC) was appointed to form states on a linguistic basis. An agreement was reached between Telangana leaders and Andhra leaders on 20 February 1956 to merge Telangana and Andhra with promises to safeguard Telangana's interests. After reorganisation in 1956, the region of Telangana was merged with Andhra State to form Andhra Pradesh.

Following this Gentlemen's agreement, the central government established the unified state of Andhra Pradesh on 1 November

1956. G.O 553 of 1959 from the united Andhra Pradesh state moved two revenue divisions of Bhadrachalam from East Godavari and Aswaraopeta from West Godavari to Khammam for administrative convenience.

Telangana movement

There have been several movements to revoke the merger of Telangana and Andhra, major ones occurring in 1969, 1972, and 2009. The movement for a new state of Telangana gained momentum in the 21st century by an initiative of Telangana Political Joint Action Committee, TJAC including political leadership representing the Telangana area. On 9 December 2009 the government of India announced the process of formation of the Telangana state. Violent protests led by people in the Coastal Andhra and Rayalseema regions occurred immediately after the announcement, and the decision was put on hold on 23 December 2009.

The movement continued in Hyderabad and other districts of Telangana. There have been hundreds of claimed suicides, strikes, protests and disturbances to public life demanding separate statehood.

Formation of Telangana state in 2014

On 30 July 2013, the Congress Working Committee unanimously passed a resolution to recommend the formation of a separate Telangana state. After various stages the bill was placed in the Parliament of India in February 2014. In February 2014, Andhra Pradesh Reorganisation Act, 2014 bill was passed by the Parliament of India for the formation of

Telangana state comprising ten districts from north-western Andhra Pradesh. The bill received the assent of the president and published in the Gazette on 1 March 2014.

The state of Telangana was officially formed on 2 June 2014. Kalvakuntla Chandrashekar Rao was elected as the first chief minister of Telangana, following elections in which the Telangana Rashtra Samithi party secured majority. Hyderabad will remain as the joint capital of both Telangana and Andhra Pradesh for a period, not more than ten years after that period Hyderabad shall be the capital of the state of Telangana and there shall be a new capital for the state of Andhra Pradesh. Andhra Pradesh picked Amaravati as its capital and moved its secretariat in 2016 and legislature in March 2017 to its new capital.

Geography

Telangana is situated on the Deccan Plateau, in the central stretch of the eastern seaboard of the Indian Peninsula. It covers 112,077 square kilometres (43,273 sq mi). The region is drained by two major rivers, with about 79% of the Godavari River catchment area and about 69% of the Krishna River catchment area, but most of the land is arid. Telangana is also drained by several minor rivers such as the Bhima, the Maner, the Manjira and the Musi.

The annual rainfall is between 900 and 1500 mm in northern Telangana and 700 to 900 mm in southern Telangana, from the southwest monsoons. Telangana contains various soil types, some of which are red sandy loams (Chalaka), Red loamy sands (Dubba), lateritic soils, salt-affected soils, alluvial soils,

shallow to medium black soils and very deep black cotton soils. These soil types allow the planting of a variety of fruits and vegetable crops such as mangoes, oranges, coconut, sugarcane, paddy, banana and flower crops.

Climate

Telangana is a semi-arid area and has a predominantly hot and dry climate. Summers start in March, and peak in May with average high temperatures in the 42 °C (108 °F) range.

The monsoon arrives in June and lasts until September with about 755 mm (29.7 inches) of precipitation. A dry, mild winter starts in late November and lasts until early February with little humidity and average temperatures in the 22–23 °C (72–73 °F) range.

Ecology

The Central Deccan Plateau dry deciduous forests ecoregion covers much of the state, including Hyderabad. The characteristic vegetation is woodlands of *Hardwickia binata* and *Albizia amara*.

Over 80% of the original forest cover has been cleared for agriculture, timber harvesting, or cattle grazing, but large blocks of forest can be found in Nagarjunsagar-Srisailam Tiger Reserve and elsewhere. The more humid Eastern Highlands moist deciduous forests cover the Eastern Ghats in the eastern part of the state.

National parks and sanctuaries

- Telangana has three National Parks: Kasu Brahmananda Reddy National Park in Hyderabad district, and Mahavir Harina Vanasthali National Park and Mrugavani National Park in Ranga Reddy district.

Wildlife Sanctuaries in Telangana include Eturunagaram Wildlife Sanctuary and Pakhal Wildlife Sanctuary in Warangal District, Kawal Tiger Reserve and Pranahita Wildlife Sanctuary in Adilabad district, Kinnerasani Wildlife Sanctuary in Khammam district, Manjira Wildlife Sanctuary in Medak district, Nagarjunsagar-Srisailam Tiger Reserve in Nalgonda and Mahbubnagar districts, Pocharam Wildlife Sanctuary in Medak and Nizamabad districts, Shivaram Wildlife Sanctuary in Karimnagar district.

Sacred groves are small areas of forest preserved by local people. Sacred groves provide sanctuary to the local flora and fauna.

Some are included within other protected areas, like Kadalivanam in Nagarjunsagar–Srisailam Tiger Reserve, but most stand alone.

There are 65 sacred groves in Telangana—two in Adilabad district, thirteen in Hyderabad district, four in Karimnagar district, four in Khammam district, nine in Mahbubnagar district, four in Medak district, nine in Nalgonda district, ten in Ranga Reddy district, and three in Warangal district.

Demographics

Language

Telugu one of the classical languages of India is the official language of Telangana and Urdu is the second official language of the state. About 77% of the population of Telangana speak Telugu and 12% speak Urdu. Before 1948, Urdu was the official language of Hyderabad State, and due to a lack of Telugu-language educational institutions, Urdu was the language of the educated elite of Telangana. After 1948, once Hyderabad State joined the new Republic of India,

Telugu became the language of government, and as Telugu was introduced as the medium of instruction in schools and colleges, the use of Urdu among non Hyderabadi Muslims decreased. Both Telugu and Urdu are used in services across the state, such as the Telangana Legislature website, with Telugu and Urdu versions of the website available, as well as the Hyderabad metro, wherein both languages are used on station names and signs along with English and Hindi. The Urdu spoken in Telangana is called Hyderabadi Urdu, which in itself is a dialect of the larger Dakhini Urdu dialects of South India. Although the language is orally spoken by most Hyderabadi Muslims, the language in a literary context has long been lost, and standard Urdu is used. Lambadi is also widely used, and Marathi and Kannada predominate in border areas. Many tribal languages are also spoken, especially in Khammam, the largest being Koya and Gondi.

Religion

According to the 2011 census, Hindus form 85.1% of the State's population. Muslims form 12.7% and Christians form 1.3% and 0.9% others.

Literacy

According to the 2011 census, Telangana's literacy rate is 66.46%. Male literacy and female literacy are 74.95% and 57.92%, respectively. Hyderabad district leads with 80.96% and Mahabubnagar district at the bottom with 56.06%.

In a 2019 report, the *Key Indicators of Household Social Consumption on Education in India*, by the Ministry of Statistics and Programme Implementation, Telangana has a literacy rate of 72.8% which is the fourth lowest of large states. It also has the second lowest literacy rate among rural women at 53.7%. 37.1% of the population aged 3–35 years received free education at pre-primary and higher levels in Telangana.

Administrative divisions

Government and politics

Telangana is governed by a parliamentary system of representative democracy, a feature the state shares with other Indian states. Universal suffrage is granted to residents. There are three branches of government.

- Executive authority is vested in the Council of Ministers headed by the Chief Minister, although the

titular head of government is the Governor. The governor is the head of state appointed by the President of India. The leader of the party or coalition with a majority in the Legislative Assembly is appointed as the chief minister by the governor, and the Council of Ministers are appointed by the governor on the advice of the chief minister. The Council of Ministers reports to the Legislative Assembly.

- The legislature, the Telangana Legislative Assembly and the Telangana Legislative Council, consists of elected members and special office bearers such as the Speaker and Deputy Speaker, that are elected by the members. Assembly meetings are presided over by the speaker or the deputy speaker in the speaker's absence. The Assembly is bicameral with 119 Members of the Legislative Assembly and 40 Member of the Legislative Council. Terms of office run for five years unless the Assembly is dissolved prior to the completion of the term. The Legislative Council is a permanent body with one-third of members retiring every two years.
- The judiciary is composed of the High Court of Judicature at Hyderabad and a system of lower courts.

Auxiliary authorities known as *panchayats*, for which local body elections are regularly held, govern local affairs. The state contributes seats to Lok Sabha.

The main players in the regional politics are the Telangana Rashtra Samithi, All India Forward Bloc, All India Majlis-e-

Ittehadul Muslimeen, Bharatiya Janata Party and Indian National Congress. Following the Telangana Legislative Assembly Election in 2014, the Telangana Rashtra Samithi under Kalvakuntla Chandrashekar Rao was elected to power.

Economy

The economy of Telangana is mainly driven by agriculture. Two important rivers of India, the Godavari and Krishna, flow through the state, providing irrigation. Farmers in Telangana mainly depend on rain-fed water sources for irrigation. Rice is the major food crop. Other important crops are cotton, sugar cane, mango, and tobacco. Recently, crops used for vegetable oil production such as sunflower and peanuts have gained favour. There are many multi-state irrigation projects in development, including Godavari River Basin Irrigation Projects and Nagarjuna Sagar Dam, the world's highest masonry dam.

The state has also started to focus on the fields of information technology and biotechnology. Telangana is one of top IT-exporting states of India. There are 68 Special Economic Zones in the state.

Telangana is a mineral-rich state, with coal reserves at Singareni Collieries Company. The Golconda region has produced some of the world's most famous diamonds, including the colourless Koh-i-Noor (United Kingdom), the blue Hope (United States), the pink Daria-i-Noor (Iran), the white Regent (France), the Dresden Green (Germany), and the colourless Orlov (Russia), Nizam and Jacob (India), as well as the now-lost diamonds Florentine Yellow, Akbar Shah and Great Mogul.

Agriculture

Rice is the major food crop and staple food of the state. Other important crops are maize, tobacco, mango, cotton and sugar cane. Agriculture has been the chief source of income for the state's economy. The Godavari and Krishna rivers flow through the state, providing irrigation. Apart from major rivers, there are small rivers like Tunga Bhadra, Bima, Dindi, Kinnerasani, Manjeera, Manair, Penganga, Pranahitha, peddavagu and Taliperu. There are many multi-state irrigation projects in development, including Godavari River Basin Irrigation Projects and Nagarjuna Sagar Dam, the world's highest masonry dam.

Agri Export Zones for the following produce have been proposed for the following locations:

- Gherkins: Mahabubnagar, Rangareddy, Medak, Karimnagar, Warangal
- Mangoes and grapes: Hyderabad, Rangareddy, Medak, Mahabubnagar

Industries

Several major manufacturing and services industries are in operation mainly around Hyderabad. Automobiles and auto components, spices, mines and minerals, textiles and apparels, pharmaceutical, horticulture, and poultry farming are the main industries in Telangana.

In terms of services, Hyderabad is nicknamed "Cyberabad" due to the location of major software industries in the city. Prior to secession, it contributed 10% to India's and 98% to Andhra

Pradesh's exports in the IT and ITES sectors in 2013 With Hyderabad in the front line of Telangana's goal to promote information technology in India, the city boasts the HITEC City as its premier hub. IT companies have also been set up in Khammam and Warangal.

The state government is in the process of developing industrial parks at different places, for specific groups of industries. The existing parks are Software Park at Hyderabad, HITEC City for software units, Apparel Park at Gundlapochampalli, Export Promotion Park at Pashamylaram, Biotechnology park at Turkapally.

Hyderabad is also a major site for healthcare-related industries including hospitals and pharmaceutical organisations such as Nizam's Institute of Medical Sciences, Yashoda Hospitals, LV Prasad Eye Care, Akruti Institute of cosmetic and plastic surgery, Fever Hospital, Durgabai Deshmukh, Continental Hospitals and Apollo Hospitals. Many pharmaceutical and pharmaceutical-related companies like Dr. Reddy's Laboratories, Shantha Biotechnics and Aragen (Formerly GVK BIO) are based out of Hyderabad.

In addition, Hyderabad-based healthcare non-profits include the Indian Heart Association, a cardiovascular disease NGO.

Tourism

Telangana State Tourism Development Corporation (TSTDC) is a state government agency which promotes tourism in Telangana. Telangana has a variety of tourist attractions including historical places, monuments, forts, waterfalls, forests and temples.

Waterfalls

- Kuntala Waterfall (45 metres (148 ft)) located in Kuntala, Adilabad district.
- Bogatha Waterfall is waterfall located in Koyaveerapuram G, Wazeedu Mandal, Jayashankar Bhupalpally district, Telangana.
- Savatula Gundam Waterfalls in Adilabad district
- Gowri Gundaala waterfalls at Sabitham village near Manthani in Peddapalli district.

Awards

Telangana state has won CNBC-TV18's Promising State of the Year Award for the year of 2015. The Jury for the India Business Leader Awards (IBLA) has collectively chosen Telangana for the award.

Media

Telangana state has English and Telugu News papers. Which are published from different cities. The print media mainly consists of Telugu and English newspapers. *Nava Telangana*, *Sakshi*, *Andhra Jyothi*, *Eenadu*and *Namaste Telangana* are all Telugu news papers. Mainly in English newspaper are *Deccan Chronicle*, *The Times Of India*, *The Hindu*, and *The Hans India*. Notable Urdu newspapers include *Etemaad Daily*, *The Munsif Daily*, and *The Siasat Daily*.

Infrastructure

Power

- Hydel and thermal power projects in the state meet the power requirements of the state. A number of new power projects are coming up in the State which is expected to generate additional power capacity in the state.

Chapter 32

Terror Attacks on Pathankot Air Base

Pathankot is a city in Punjab, India. Pathankot district shares an international border, on its west, with Pakistan. Pathankot was officially declared a district of the Punjab state on 27th of July, 2011. It was previously a Tehsil of Gurdaspur district, Punjab. Pathankot district is at the intersection of three of the northern states of India — Punjab, Himachal Pradesh and Jammu and Kashmir. Due to its location, Pathankot serves as a travel hub for these three northerly states.

Pathankot has a municipal corporation. Pathankot is the 6th most populous city of Punjab, after Ludhiana, Amritsar, Jalandhar, Patiala and Bathinda.

The city is divided into 50 wards.

Situated in the picturesque foothills of Kangra and Dalhousie, with the river Chakki flowing close by, the city is often used as a rest-stop before heading into the mountains of Jammu and Kashmir, Dalhousie, Chamba, Kangra, Dharamshala, Mcleodganj, Jwalaji, Chintpurni and further into the Himalayas. Pathankot also serves as an education hub for the nearby areas of Jammu & Kashmir and Himachal Pradesh. Many rural students of these states come to Pathankot for education.

History

- Pathankot is an ancient city and has historical significance. From various accounts; It may be believed that **Audumbara** was the name of it. Numerous coins of great antiquity found at Pathankot prove that it is one of the oldest sites in the Punjab (that has been divided after the partition in 1947). It must always have been a place of great significance as it is situated in the foot plains of the hills.

Pathankot was the capital of Nurpur State and its name was changed to Dhameri (Nurpur) during the Akbar reign. The Pathania clan of Rajput derived its name from ancient name of Pathankot which was **Paithan** at that time.

After independence

During partition, the initial plan by border demarcation committee was to place Pathankot (part of Gurdaspur district that time) into Pakistan and Shakargarh district into India. However, as a later fine tuning of decision viceversa was done i.e. Shakargarh district was given to Pakistan and Gurdaspur district (along Pathankot) was given to India.

Geography

Pathankot has an average elevation of 332 metres (1,089 ft). It is a green town surrounded by the Ravi and Chakki rivers.

Shiwalik foothills on the south and east and snow-capped Himalayas in the back drop in north.

Average temperature

- **Spring**: The climate remains the most enjoyable part of the year during the spring season (from mid-February to mid-April). Temperatures vary between (max) 16 °C to 25 °C and (min) 9 °C to 18 °C.
- **Autumn**: In autumn (from mid-September to mid November.), the temperature may rise to a maximum of 30 °C. Temperatures usually remain between 16° to 27° in autumn. The minimum temperature is around 11 °C.
- **Summer**: The temperature in summer (from mid-May to mid-June) may rise to a maximum of 46 °C (rarely). Temperatures generally remain between 34 °C to 46 °C (91 – 115F).
- **Monsoon**: During monsoon(from mid-June to mid-September), Pathankot receives moderate to heavy rainfall and sometimes heavy to very heavy rainfall (generally during the month of August or September). Usually, the rain bearing monsoon winds blow from south-west/ south-east. Mostly, the city receives heavy rain from south (which is mainly a persistent rain) but it generally receives most of its rain during monsoon either from North-west or North-east. Maximum amount of rain received by the city of Pathankot during monsoon season is 195.5 mm in a single day.
- **Winter**: Winters (November to mid-March) are mild but it can sometimes get quite chilly in Pathankot.

Average temperatures in the winter remain at (max) 7 °C to 15 °C and (min) 0 °C to 8 °C. Rain usually comes from the west during winters and it is usually a persistent rain for 2–3 days with sometimes hail-storms. Pathankot experienced snowfall in 2012 after almost 55 years.

Languages

The city speaks many languages like Hindi, Punjabi, Pahari and Dogri. Punjabi is the most spoken as well as the official language here.

Issues

1) Government of Pathankot had constructed 4 public toilets in 2018 but since then,they have been opened for only 6 days just to get good rankings in surveys. You can find them at various places where they charge you 10/- but you can avail general conveinces in a clean environment

2) Land encroachment by an Excise Officer in Municipal Colony has caused a lot of controversies.

3) MIG (Middle Income Group) Flats have caused a lot of controversy here. The construction of these flats was started in 2011 and was supposed to be completed in 18 months but they took 10 years to complete just because of corruption. Owners filed legal cases against Improvement Trust of Pathankot .

It is then the newly appointed chairman of Improvement Trust Pathankot, Vibhuti Sharma restarted the work which was

stopped from last 3 years and completed it. Thus in December 2020 , the keys were handed to their owners. This is a routine practice in india.

4) Roads of Pathankot are in the worst condition ever.But they started working on it now after covid lockdown.

5) The public swimming pool has wasted lots of public money as due to corruption there has always been a leakage in it and filtration system is not working from last 3 years. Trials were done by the swimmers in February 2020 and many of them got skin diseases. Betterment to be achieved.

6) Despite being a major Railway stop of North India Railways Network , the Pathankot Cantt railway station don't have any facilities like no clean water to drink , no proper Toilets and is 328 metres long out of which only 80 metres is shedded while 248 metres is opened from above, causes problems to people like rainfall , high heat in summers. This is supposed to be done by railway authorities.

7) people post unnecessory things on wkipedia, they think they are smart but actually they are .....

8) No traffic lights in the city. Despite being so much crowd , the traffic management is done by the police manually by standing whole day in the chowks like Valmiki Chowk , Peer Baba Chowks etc. People don't follow rules like helmets, over speeding, wrong side driving, drinking and driving etc.

Transport

Pathankot is well connected by rail and road with the rest of the country. Pathankot is connected by a vast network of private and public-sector bus services to other cities in Punjab, Himachal Pradesh, Delhi, Haryana, Jammu and Kashmir. Important destinations include Delhi, Manali Chandigarh, Jammu, Dharamshala, Dalhousie and Amritsar. Pathankot is used as a gateway for Chamba and Kangra Valley in Himachal Pradesh and for various locations in Jammu and Kashmir like Jammu City Mansar Lake, Srinagar, Udhampur, Holy Cave at Amarnath, Patni Top and Holy Cave of Mata Vaishno Devi (Katra) 155 km away from Pathankot.

One can take an auto rickshaw or a cycle rickshaw .

By Air

- Pathankot Airport is a domestic airport serving Pathankot with scheduled flight operations to/from New Delhi by Alliance Air under the UDAN Scheme. The nearest International Airport, however is located in Amritsar.

Train

It has direct train links with Delhi, Jammu and other Indian cities. All trains going to Jammu pass through Pathankot Cantt Station.

The important trains include Rajdhani, Swaraj Express, Pooja Express, Shri Shakti Express. Super fast trains do not enter

Pathankot Station in City. The distance from Pathankot Junction & Pathankot Cant Railway station is just 4 km.

Pathankot Railway Station under A-category. Pathankot is a major railroad junction. Lines from Amritsar (2 hrs) and Delhi (8 hrs) merge here, and all services to Jammu (2 hrs) pass through. In addition to Pathankot station itself, there is a second station called **Chakki Bank** renamed Pathankot Cantt just 4 km away, which serves some express trains that do not stop in Pathankot station. Nowadays the majority of the Jammu trains stop only at Pathankot Cantt Railway Station and not at Pathankot Railway Station.

Pathankot is also served by the narrow-gauge Kangra Valley Railway (a.k.a. *Kangra Toy Train*) built by the British, which crawls 128 km through stunning scenery to Joginder Nagar via Palampur and Kangra (near Dharamsala). However, the luxury *Kangra Queen*services were terminated in 2003, leaving about six departures daily of slow, often packed second class trains, taking over six hours. Bookings for these can only be done locally at Pathankot station. Some of these trains run to Baijnath Paprola and a few to Joginder Nagar. The main stations on this line include Kangra and Palampur, although Dalhousie and Dharmasala are not on the line. The town is the lower terminus of the Kangra Valley Railway, thereby connecting the mountainous regions of western Himachal Pradesh to the network of Indian Railways.

Bus

Maharana Pratap Inter State Bus Terminal Pathankot. It's close to the Pathankot Junction Railway station. Public buses

to Dharamshala Dalhousie take 3–4 hours. while buses to Amritsar take 3 hours. Dalhousie famous destination for honeymoon couples is at just 80 km from Pathankot. The famous Hindu Pilgrimage Vaishno devi is just 160 km from Pathankot. Chandigarh is 4–5 hours away. It is well connected with bus services from Punjab roadways, Haryana Roadways, Himachal Roadways J&K transport, and private AC volvo buses.

One can stop over in Pathankot en route to Gurdaspur(35 km), Mukerian (40), Joginder Nagar (149 km), Dharamshala (88 km), Dalhousie (100 km), Amritsar (108), Palampur (112 km), Chamba (100 km) & Jammu (100 km), Hoshiarpur (100 km), Kangra (86 km), Jalandhar (108 km), Srinagar (400 km) all in different directions from Pathankot via Jalandhar-Srinagar National highway (NH-44), Dabwali-Pathankot National highway (NH-54) and Pathankot-Mandi National highway (NH-154).

Economy

Pathankot is a commercial center. Wholesellers and distributors of consumer goods cater to Himachal Pradesh, Jammu & Kashmir and northwest Punjab.

Demographics

As per provisional data of 2011 census Pathankot urban agglomeration had a population of 159,909, out of which males were 84,145 and females were 75,764. The literacy rate was 88.71 per cent.

Sports

On 8 November 2014, Punjab Deputy CM Sukhbir Singh Badal laid the foundation stone for a stadium in Pathankot. But even after 6 years , the stadium is still incomplete. Sportspeople struggles to get any facilities in Pathankot. There are no proper grounds to practice. So they go to other cities, while most of the young population leaves the sports.

Development

Pathankot is one of the most developed cities in Punjab

Tourist places

Atal setu cable bridge located in Basohli is a tourism place and a pre-wedding point. The distance from pathankot city is 60 km

- **Mukteshwar Mahadev Temple** (मुक्तेश्वरमहादेवमंदिर), also known as Mukesaran Mandir, is a shrine of Lord Shiva and is 25 km from Pathankot City in Village Doong, on the bank of the Ravi River. These caves are on the way to Shahpur Kandi. It is the holy temple of the Hindu religion, where the idols of Lord Ganesha, Lord Bramha, Lord Vishnu, Lord Hanuman, and Goddess Parvati are present. There are some caves which purportedly date to the time of the Mahabharata. According to legend, the Pandavas stayed in those caves for a night during their exile

(Agayatwas). This temple is said to be 5,500 years old, dating it to the time of Mahabharata.

- **Pracheen Shiv Mandir** Kathgarh is one of the temples in the area. Devoted to Lord Shiva and Parvati, this temple is 25 km from Pathankot City, 4 km from Mirthal, and 7 km from Indora on the meeting point of the Beas and the Choch rivers. The temple is built in a Roman architectural style, housing two Lingas of light grey sandy stone of 6' and 4'7" in height having octagonal base with every side measuring 1'3" and 1'3" above the ground level, personifying Lord Shiva and Parvati respectively. These Lingas stand 3 1/2" apart at the bottom, and incline towards each other, being just two inches away from each other at the top.
- **Shahpurkandi fort** is located 20 km (approximately) from Pathankot City. It was built in 1505 A.D. by a Rajput chief Jaspal Singh Pathania. It was strategically located to have control over the Kangra and Nurpur region. The fort is in ruins.

Pathankot city is surrounded by both the Shivalik range, part of which makes up the foothills of the Himalayas, and the river Chakki. Places near Pathankot include Shahpur Kandi with a hanging rest house,

Ranjit Sagar Dam which is the highest gravity dam in Asia. Madhopur (Madhopur, Punjab) head works which date back to the Mughal era. head works of Upper Bari Doab, Shahpur Kandi are the attractions of this area. **Keshopur Chhamb** is home to many Migratory Birds and is only major natural wetland in the state.

- There is a fortress called the **Nurpur Fort** built by the Pathania Rajputs, more than 900 years ago. The temple is also built there named **Brij Raj Swami** devoted to Lord Krishna and Mira Bai, the only place where idols of both are worshipped. It was damaged due to the earthquake which struck in 1905 A.D., 25 km from Pathankot. It is 25 km away from Pathankot.
- **Jugial Township**, is located 15 km (approx) from Pathankot. This place has greenery all around and one Shri Laxmi Narayan Mandir which is the biggest among the nearby areas. There is also Singh Sabha Gurudwara near Shri Laxmi Narayan Mandir.
- A Hydraulic Research Station at the Upper Bari Doab Canal is situated at Malikpur which is 7 km from Pathankot, where various models of Dams and Irrigation Canals are made before actual work starts upon them.
- Dalhousie is snowy in winter, and nearby Khajjiar has been described as an "Indian Switzerland" due to its scenery and activities such as balloon riding, paragliding, and horseback riding.
- For religious trips like Jwala ji (130 km), Chintpurni (130 km), Pathankot is a place to rest before heading to the hill route the next morning. A Grand Ranjit Sagar Dam (earthen Dam made of mud and not concrete) is a 100 km water reservoir. Chinmayya Temple (Swami Chinmayya Nand) is on the way to Yol, India Camp (100 km). This is the place where the German Soldiers (POW) were kept in confinement after the Second World War by the British.

The Union Ministry for Forests, Environment and Climate Change has given the long-awaited signal to develop the twin islands of Kalara and Palangi, located in the midst of the Ranjit Sagar Dam Lake, as world class tourist spots.

Chapter 33

The Goods and Services Tax (GST) Launched

Goods and Services Tax (**GST**) is an indirect tax (or consumption tax) used in India on the supply of goods and services. It is a comprehensive, multistage, destination-based tax: comprehensive because it has subsumed almost all the indirect taxes except a few state taxes. Multi-staged as it is, the GST is imposed at every step in the production process, but is meant to be refunded to all parties in the various stages of production other than the final consumer and as a destination-based tax, it is collected from point of consumption and not point of origin like previous taxes.

Goods and services are divided into five different tax slabs for collection of tax: 0%, 5%, 12%, 18% and 28%. However, petroleum products, alcoholic drinks, and electricity are not taxed under GST and instead are taxed separately by the individual state governments, as per the previous tax system. There is a special rate of 0.25% on rough precious and semi-precious stones and 3% on gold. In addition a cess of 22% or other rates on top of 28% GST applies on few items like aerated drinks, luxury cars and tobacco products. Pre-GST, the statutory tax rate for most goods was about 26.5%, Post-GST, most goods are expected to be in the 18% tax range.

The tax came into effect from 1 July 2017 through the implementation of the One Hundred and First Amendment of

the Constitution of India by the Indian government. The GST replaced existing multiple taxes levied by the central and state governments.

The tax rates, rules and regulations are governed by the GST Council which consists of the finance ministers of the central government and all the states. The GST is meant to replace a slew of indirect taxes with a federated tax and is therefore expected to reshape the country's 2.4 trillion dollar economy, but its implementation has received criticism. Positive outcomes of the GST includes the travel time in interstate movement, which dropped by 20%, because of disbanding of interstate check posts.

History

Formation

The reform of India's indirect tax regime was started in 1986 by Vishwanath Pratap Singh, Finance Minister in Rajiv Gandhi’s government, with the introduction of the Modified Value Added Tax (MODVAT). Subsequently, Prime Minister P V Narasimha Rao and his Finance Minister Manmohan Singh, initiated early discussions on a Value Added Tax (VAT) at the state level. A single common "Goods and Services Tax (GST)" was proposed and given a go-ahead in 1999 during a meeting between the Prime Minister Atal Bihari Vajpayee and his economic advisory panel, which included three former RBI governors IG Patel, Bimal Jalan and C Rangarajan. Vajpayee set up a committee headed by the Finance Minister of West Bengal, Asim Dasgupta to design a GST model.

The Asim Dasgupta committee which was also tasked with putting in place the back-end technology and logistics (later came to be known as the GST Network, or GSTN, in 2015). It later came out for rolling out a uniform taxation regime in the country. In 2002, the Vajpayee government formed a task force under Vijay Kelkar to recommend tax reforms. In 2005, the Kelkar committee recommended rolling out GST as suggested by the 12th Finance Commission.

After the defeat of the BJP-led NDA government in the 2004 Lok Sabha election and the election of a Congress-led UPA government, the new Finance Minister P Chidambaram in February 2006 continued work on the same and proposed a GST rollout by 1 April 2010. However, in 2011, with the Trinamool Congress routing CPI(M) out of power in West Bengal, Asim Dasgupta resigned as the head of the GST committee. Dasgupta admitted in an interview that 80% of the task had been done.

The UPA introduced the 115th Constitution Amendment Bill on 22 March 2011 in the Lok Sabha to bring about the GST. It ran into opposition from the Bharatiya Janata Party and other parties and was referred to a Standing Committee headed by the BJP's former Finance Minister Yashwant Sinha. The committee submitted its report in August 2013, but in October 2013 Gujarat Chief Minister Narendra Modi raised objections that led to the bill's indefinite postponement. The Minister for Rural Development Jairam Ramesh attributed the GST Bill's failure to the "single handed opposition of Narendra Modi".

In the 2014 Lok Sabha election, the Bharatiya Janata Party (BJP)-led NDA government was elected into power. With the

consequential dissolution of the 15th Lok Sabha, the GST Bill – approved by the standing committee for reintroduction – lapsed. Seven months after the formation of the then Modi government, the new Finance Minister Arun Jaitley introduced the GST Bill in the Lok Sabha, where the BJP had a majority. In February 2015, Jaitley set another deadline of 1 April 2017 to implement GST. In May 2016, the Lok Sabha passed the Constitution Amendment Bill, paving way for GST.

However, the Opposition, led by the Congress, demanded that the GST Bill be again sent back for review to the Select Committee of the Rajya Sabha due to disagreements on several statements in the Bill relating to taxation. Finally, in August 2016, the Amendment Bill was passed. Over the next 15 to 20 days, 18 states ratified the Constitution amendment Bill and the President Pranab Mukherjee gave his assent to it.

A 21-member selected committee was formed to look into the proposed GST laws. After GST Council approved the Central Goods and Services Tax Bill 2017 (The CGST Bill), the Integrated Goods and Services Tax Bill 2017 (The IGST Bill), the Union Territory Goods and Services Tax Bill 2017 (The UTGST Bill), the Goods and Services Tax (Compensation to the States) Bill 2017 (The Compensation Bill), these Bills were passed by the Lok Sabha on 29 March 2017. The Rajya Sabha passed these Bills on 6 April 2017 and were then enacted as Acts on 12 April 2017. Thereafter, State Legislatures of different States have passed respective State Goods and Services Tax Bills. After the enactment of various GST laws, Goods and Services Tax was launched all over India with effect from 1 July 2017. The Jammu and Kashmir state legislature passed its GST act on 7 July 2017, thereby ensuring that the

entire nation is brought under a unified indirect taxation system. There was to be no GST on the sale and purchase of securities. That continues to be governed by Securities Transaction Tax (STT).

Implementation

The GST was launched at midnight on 1 July 2017 by the President of India, and the Government of India. The launch was marked by a historic midnight (30 June – 1 July) session of both the houses of parliament convened at the Central Hall of the Parliament. Though the session was attended by high-profile guests from the business and the entertainment industry including Ratan Tata, it was boycotted by the opposition due to the predicted problems that it was bound to lead for the middle and lower class Indians. The tax was strongly opposed by the opposing Indian National Congress. It is one of the few midnight sessions that have been held by the parliament - the others being the declaration of India's independence on 15 August 1947, and the silver and golden jubilees of that occasion. After its launch, the GST rates have been modified multiple times, the latest being on 22 December 2018, where a panel of federal and state finance ministers decided to revise GST rates on 28 goods and 53 services.

Members of the Congress boycotted the GST launch altogether. They were joined by members of the Trinamool Congress, Communist Parties of India and the DMK. The parties reported that they found virtually no difference between the GST and the existing taxation system, claiming that the government was trying to merely rebrand the current taxation system. They also argued that the GST would increase existing rates on common

daily goods while reducing rates on luxury items, and affect many Indians adversely, especially the middle, lower middle and poorer income groups.

Tax

Taxes subsumed

The single GST subsumed several taxes and levies, which included central excise duty, services tax, additional customs duty, surcharges, state-level value added tax and Octroi. Other levies which were applicable on inter-state transportation of goods have also been done away with in GST regime. GST is levied on all transactions such as sale, transfer, purchase, barter, lease, or import of goods and/or services.

India adopted a dual GST model, meaning that taxation is administered by both the Union and state governments. Transactions made within a single state are levied with Central GST (CGST) by the Central Government and State GST (SGST) by the State governments.

For inter-state transactions and imported goods or services, an Integrated GST (IGST) is levied by the Central Government. GST is a consumption-based tax/destination-based tax, therefore, taxes are paid to the state where the goods or services are consumed not the state in which they were produced. IGST complicates tax collection for State Governments by disabling them from collecting the tax owed to them directly from the Central Government. Under the previous system, a state would only have to deal with a single government in order to collect tax revenue.

HSN code

India is a member of World Customs Organization (WCO) since 1971. It was originally using 6-digit HSN codes to classify commodities for Customs and Central Excise. Later Customs and Central Excise added two more digits to make the codes more precise, resulting in an 8 digit classification. The purpose of HSN codes is to make GST systematic and globally accepted.

HSN codes will remove the need to upload the detailed description of the goods. This will save time and make filing easier since GST returns are automated.

If a company has turnover up to INR 15 million in the preceding financial year then they did not mention the HSN code while supplying goods on invoices. If a company has turnover more than INR 15 million but up to INR 50 million, then they need to mention the first two digits of HSN code while supplying goods on invoices. If turnover crosses INR 50 million then they shall mention the first 4 digits of HSN code on invoices.

Rate

The GST is imposed at variable rates on variable items. The rate of GST is 18% for soaps and 28% on washing detergents. GST on movie tickets is based on slabs, with 18% GST for tickets that cost less than Rs. 100 and 28% GST on tickets costing more than Rs.100 and 28% on commercial vehicle and private and 5% on readymade clothes. The rate on under-construction property booking is 12%. Some industries and products were exempted by the government and remain

untaxed under GST, such as dairy products, products of milling industries, fresh vegetables & fruits, meat products, and other groceries and necessities.

Checkposts across the country were abolished ensuring free and fast movement of goods. Such efficient transportation of goods was further ensured by subsuming octroi within the ambit of GST.

The Central Government had proposed to insulate the revenues of the States from the impact of GST, with the expectation that in due course, GST will be levied on petroleum and petroleum products. The central government had assured states of compensation for any revenue loss incurred by them from the date of GST for a period of five years. However, no concrete laws have yet been made to support such action. GST council adopted concept paper discouraging tinkering with rates.

e-Way Bill

An e-Way Bill is an electronic permit for shipping goods similar to a waybill. It was made compulsory for inter-state transport of goods from 1 June 2018. It is required to be generated for every inter-state movement of goods beyond 10 kilometres (6.2 mi) and the threshold limit of ₹50,000 (US$700).

It is a paperless, technology solution and critical anti-evasion tool to check tax leakages and clamping down on trade that currently happens on a cash basis. The pilot started on 1 February 2018 but was withdrawn after glitches in the GST Network. The states are divided into four zones for rolling out in phases by end of April 2018.

A unique e-Way Bill Number (EBN) is generated either by the supplier, recipient or the transporter. The EBN can be a printout, SMS or written on invoice is valid. The GST/Tax Officers tally the e-Way Bill listed goods with goods carried with it. The mechanism is aimed at plugging loopholes like overloading, understating etc. Each e-way bill has to be matched with a GST invoice.

Transporter ID and PIN Code now compulsory from 01-Oct-2018.

It is a critical compliance-related GSTN project under the GST, with a capacity to process 75 lakh e-way bills per day.

Intra-State e-Way Bill The five states piloting this project are Andhra Pradesh, Gujarat, Kerala, Telangana and Uttar Pradesh, which account for 61.8% of the inter-state e-way bills, started mandatory intrastate e-way bill from 15 April 2018 to further reduce tax evasion. It was successfully introduced in Karnataka from 1 April 2018. The intrastate e-way bill will pave the way for a seamless, nationwide single e-way bill system. Six more states Jharkhand, Bihar, Tripura, Madhya Pradesh, Uttarakhand and Haryana will roll it out from 20 April 18. All states are mandated to introduce it by 30 May 2018.

Reverse Charge Mechanism

Reverse Charge Mechanism (RCM) is a system in GST where the receiver pays the tax on behalf of unregistered, smaller material and service suppliers. The receiver of the goods is eligible for Input Tax Credit, while the unregistered dealer is not.

The central Government released **Rs 35,298 crore** to the state under **GST compensation**. For the implementation, this amount was given to the state to compensate the revenue. Central government has to face many criticisms for delay in compensation.

Goods kept outside the GST

- Alcohol for human consumption (i.e., not for commercial use).
- Petrol and petroleum products (GST will apply at a later date), i.e., petroleum crude, high-speed diesel, motor spirit (petrol), natural gas, aviation turbine fuel.

Revenue Distribution

Revenue earned from GST (intra state transaction - seller and buyer both are located in same state) is shared equally on 50-50 basis between central and respective state governments. Example: if state of Goa has collected a total GST revenue (intra state transaction - seller and buyer both are located in same state) of 100 crores in month of January then share of central government (CGST) will be 50 crores and remaining 50 crores will be share of Goa state government (SGST) for month of January.

For distribution of IGST (inter state transaction - seller and buyer both are located in different states) collection, revenue is collected by central government and shared with state where good is imported. Example: 'A' is a seller located in state of Goa selling a product to 'B' a buyer of that product located in

state of Punjab, then IGST collected from this transaction will be shared equally on 50-50 basis between central and Punjab state governments only.

GST Council

GST Council is the governing body of GST having 33 members, out of which 2 members are of centre and 31 members are from 28 state and 3 Union territories with legislation. The council contains the following members (a) Union Finance Minister (as chairperson) (b) Union Minister of States in charge of revenue or finance (as member) (c) the ministers of states in charge of finance or taxation or other ministers as nominated by each states government (as member). GST Council is an apex member committee to modify, reconcile or to procure any law or regulation based on the context of goods and services tax in India. The council is headed by the union finance minister Nirmala Sitharaman assisted with the finance minister of all the states of India. The GST council is responsible for any revision or enactment of rule or any rate changes of the goods and services in India.

Goods and Services Tax Network (GSTN)

The GSTN software is developed by Infosys Technologies and the Information Technology network that provides the computing resources is maintained by the NIC. "Goods and Services Tax Network" (GSTN) is a nonprofit organisation formed for creating a sophisticated network, accessible to stakeholders, government and taxpayers to access information from a single source (portal). The portal is accessible to the

Tax authorities for tracking down every transaction, while taxpayers have the ability to connect for their tax returns.

The GSTN's authorised capital is ₹10 crore (US$1.4 million) in which initially the Central Government held 24.5 percent of shares while the state government held 24.5 percent. The remaining 51 percent were held by non-Government financial institutions, HDFC and HDFC Bank hold 20%, ICICI Bank holds 10%, NSE Strategic Investment holds 10% and LIC Housing Finance holds 11% .

However, later it was made a wholly owned government company having equal shares of state and central government.

Criticism

Technicalities of GST implementation in India have been criticized by global financial institutions/industries, sections of Indian media and opposition political parties in India. World Bank's 2018 version of India Development Update described India's version of GST as too complex, noticing various flaws compared to GST systems prevalent in other countries; most significantly, the second-highest tax rate among a sample of 115 countries at 28%.

GST's implementation in India has been further criticized by Indian businessmen for problems including tax refund delays and too much documentation and administrative effort needed. According to a partner at PwC India, when the first GST returns were filed in August 2017, the system crashed under the weight of filings.

The opposition Indian National Congress has consistently been among the most vocal opponents of GST implementation in India with party President, and leader of the opposition, Rahul Gandhi, slamming BJP for allegedly "destroying small businessmen and industries" in the country. He went on to pejoratively dub GST as "Gabbar Singh Tax" after an ill-famed, fictional dacoit in Bollywood. Claiming the implementation of GST as a "way of removing money from the pockets of the poor", Rahul has called it as a "big failure" while declaring that if the Congress party is elected to power, it will implement a single slab GST instead of different slabs. In the run-up to the elections in various states of India, Rahul has intensified his "Gabbar Singh" criticisms on Modi's administration.