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A Disease-Free and Productive Nation: India by 2047
Part - 1

By Uday Kumar Varma

Author is a former Secretary, Information and Broadcasting, GOI

I. Introduction

As India approaches the centenary of its independence in 2047, India is poised to emerge as one of the world's top three economies and a global superpower. However, this aspiration hinges on the health and productivity of its people. With a population of nearly 1.4 billion, India holds a unique demographic advantage. To use this potential fully, we need to focus on preventing problems instead of just dealing with them when they arise.

A robust healthcare strategy that promotes preventive care over curative interventions will be key to ensuring a healthy, disease-free India. This blueprint envisions a health revolution that empowers individuals, reduces dependency on hospitals, and resists the vested interests that may hinder progress.

II. Current Demographic Profile and Projections for 2047

India's demographic profile is a critical asset, positioning the nation uniquely in the global landscape. With over 45% of its population below 24 years of age and a median age of 29, India is one of the youngest countries in the world. The working-age population currently constitutes 68% of the total, while only 7% are elderly. This demographic structure underpins the country's economic potential, fostering innovation and growth.

However, by 2047, the demographic scenario will shift significantly. India's population is expected to peak at 1.6 billion, accompanied by substantial changes in age distribution. The working-age population will decline to 60-62%, while the elderly population is projected to triple, reaching nearly 20%. The median age will rise to 38-40 years, aligning with current figures in developed nations. Additionally, urbanization will accelerate, with over 50% of the population living in cities.

This demographic transition presents a dual challenge: capitalizing on opportunities for technological and economic advancements while addressing the rising demands on healthcare and social systems.

Implications of Demographic Transition for Healthcare

The evolving demographic profile will significantly influence healthcare needs and priorities:

1. Increased Healthcare Demand

The rise in the elderly population will lead to a surge in age-related health issues, such as cardiovascular diseases, diabetes, arthritis, cancer, and neurodegenerative disorders like Alzheimer's. This will place considerable strain on healthcare infrastructure and necessitate greater investment in geriatric care, palliative care, and long-term healthcare facilities.

2. Resource Allocation Challenges

With an increasing share of healthcare resources required for elderly care, areas like maternal and child health, primary care, and preventive initiatives risk being overshadowed. Ensuring equitable resource allocation will be crucial to maintaining intergenerational equity.

3. Workforce and Infrastructure Gaps

India's healthcare workforce is ill-prepared for the demographic transition. Specializations in geriatrics and rehabilitation will be essential, but current shortages in trained medical professionals, particularly in rural areas, highlight the need for systemic reforms. Urbanization will further strain urban healthcare systems, creating overcrowding and disparities in rural healthcare access.

4. Social and Mental Health Concerns

The rise of nuclear families and erosion of traditional caregiving structures may leave many elderly individuals vulnerable to loneliness, depression, and anxiety. Strengthening mental health services and fostering community-based support systems will be essential.

5. Financial and Social Security

A growing elderly population will require robust financial protection through expanded insurance coverage and sustainable pension schemes. Balancing fiscal constraints with the need for social welfare will be a complex but necessary task.

India's demographic trajectory underscores the need for proactive planning and investment in healthcare. Addressing these challenges effectively will require a well-rounded approach that prioritizes equitable resource allocation, workforce development, and preventive health initiatives. These considerations will be central to crafting a sustainable and inclusive healthcare strategy for the nation's future.

III. Overview of Current Health Infrastructure

India's healthcare infrastructure, while significantly expanded in recent decades, continues to face challenges of inequitable distribution and quality. The healthcare system is structured across primary, secondary, and tertiary levels, yet many components remain under-resourced and unevenly developed, particularly in rural areas. A comprehensive analysis of the current system reveals critical gaps that must be addressed to meet the healthcare demands of an aspiring world power by 2047.

Primary Health Centres (PHCs), serving as the first point of contact for rural healthcare, number 24,855 nationwide. These centres are designed to cater to populations ranging between 20,000 and 30,000. However, they frequently lack essential infrastructure and staff. Many PHCs operate without a full complement of medical officers, nurses, and diagnostic equipment, undermining their efficacy. In contrast, developed nations like the United Kingdom ensure robust primary healthcare networks, emphasizing universal access and consistent quality across locations.

Community Health Centres (CHCs) form the secondary tier of healthcare delivery in India, with 5,335 centres established to serve populations between 80,000 and 120,000. Despite their intended role in providing specialized care, CHCs often fall short of the required staffing norms, particularly in critical specialties such as surgery and obstetrics. These shortages highlight systemic inefficiencies that compromise patient outcomes. The United States, by comparison, addresses similar challenges through Federally Qualified Health Centres (FQHCs), which receive adequate funding and maintain staffing levels to ensure comprehensive care in underserved areas.

At the tertiary level, district hospitals serve as the backbone of advanced medical care, with over 800 such facilities across India. Uttar Pradesh leads with the highest number of district hospitals, reflecting its large population. However, these hospitals face significant challenges, including overcrowding, resource limitations, and delays in service delivery. Developed countries maintain better patient-to-doctor ratios and provide advanced diagnostic and treatment capabilities at regional hospitals, ensuring timely and effective care.

Medical education and training infrastructure have seen considerable growth in India, with 612 medical colleges offering nearly 92,127 MBBS seats and producing approximately 27,000 doctors annually. Despite these achievements, the geographic distribution of medical colleges remains skewed, with only 11% located in rural areas. This imbalance perpetuates the urban-rural divide in healthcare access and expertise. In countries like Germany, dual training models effectively combine academic learning with practical experience, ensuring a steady supply of qualified healthcare professionals across regions.

India's healthcare delivery is overwhelmingly dominated by the private sector, which accounts for approximately 70% of services, predominantly in urban areas. This dominance has resulted in high out-of-pocket expenditure (OOPE), with nearly 63% of healthcare costs borne directly by individuals. This financial burden contrasts sharply with public health systems in countries like Canada and the United Kingdom, where government-funded schemes ensure equitable access to healthcare without imposing direct financial barriers on patients.

To Be continued in next issue ....

On Nuclear Energy, It Can't be Business-As-Usual

By Dr. Anil Kakodkar

The Author is a nuclear scientist, was director of Bhabha Atomic Research Centre

At long last, the government seems to have awakened to the inevitable role of nuclear energy in the realisation of 'Viksit Bharat'. The private sector, while it needs to be mobilised to scale up the programme has, at best, a secondary role.

At long last, the government seems to have awakened to the inevitable role of nuclear energy in the realisation of "Viksit Bharat". Setting up 100 GWe of nuclear capacity by 2047 may seem like a tall order, especially with little clarity on how it will be accomplished. Yet, it is a minimum mission statement for the long road to Viksit Bharat.

Let us examine this further. Running a 100 GWe nuclear capacity would need around 18,000 tons of mined uranium annually. This corresponds to about a third of the world's uranium production today. Clearly, access to so much uranium is not possible. The situation gets exacerbated by the fact that India's nuclear generation capacity needs to be expanded by an order of magnitude.

The only way out then is to start recycling uranium and, more importantly, thorium. This would bring down the need for mined uranium by an order of magnitude (maybe two). We have to be in this mode by the time we reach around 25 GWe nuclear generation capacity, since by then, uranium requirements in the present mode would reach around 8-10 per cent of the current global uranium production and access to uranium would become difficult. That day is only around 10 years away, going by the current projections. Recycled nuclear fuel would then be necessary to sustain the capacity addition growth rate.

We have already closed the nuclear fuel cycle and produced enough MoX fuel for recycling in the 500 MWe Prototype Fast Breeder Reactor, the next frontier for power generation capacity growth. The large-scale deployment of these reactors that would use recycled fuel and breed much more, however, is still eluding us. While this remains important and we need to catch up as soon as possible, we need a quick solution to tide over the impending slowdown in nuclear capacity addition rate on account of fuel-supply constraints. We faced a similar situation earlier that was resolved through the opening of international civil nuclear cooperation. This gave us access to global uranium markets.

Such a solution would lie in looking at fuel cycle options rather than reactor options. Thorium, which has been our long-standing hope for India's true energy security, can be irradiated along with high assay low enriched uranium (HALEU) in pressurised heavy-water reactors (PHWRs) at scale. The used fuel that would arise can be recycled to set up additional power generation capacity including through the molten salt reactors (MSRs), which would be necessary in the third stage of our nuclear power development anyway. Rather than wasting time running behind foreign vendors pursuing their own interests, disregarding India's true needs, we should set our technological goals and leverage our market strength to mobilise domestic and foreign capabilities to achieve them. While recycling spent uranium fuel along with plutonium in fast reactors remains a superior option, recycling HALEU-thorium fuel is the next best alternative. It would allow the programme to grow as long as the irradiated fuel feed is available. Additionally, we will move closer to our long-term objectives while overcoming the fuel supply constraint that is bound to arise.

Thorium, apart from its energy value, has some unprecedented advantages. These come with significant economic gains particularly in PHWRs. The operation and safety performance of the reactors improve, and, in addition to savings in mined uranium,

the quantity of fuel bundles needed and later managed reduces drastically. Most importantly, the fuel cycle becomes proliferation-resistant, virtually eliminating the security risks related to diversion by malevolent elements. HALEU-thorium fuel bundles are of the same external geometry and can be deployed without any significant change in the reactor design. Most importantly, accumulated spent fuel becomes a feed for fuelling thorium-uranium molten salt reactors. Such reactors and the necessary fuel cycle technology should be developed and deployed on priority. Going forward, one could integrate spallation neutron sources in such MSRs, enabling the growth objectives that had necessitated fast breeder reactors.

The plans to establish a number of Bharat Small Reactors (BSR) in an innovative public-private partnership mode are indeed welcome. Along with the 700 MWe PHWRs, which must form the main workhorse for capacity addition, BSRs could play a supportive role. HALEU–thorium fuel can be leveraged in both to enable the continuation of capacity addition beyond the time uranium supply constraint sets in, despite delays in the Fast Breeder Reactor programme.

Small Modular Reactors are a new craze in the nuclear industry. But India already possesses the largest experience in the small reactor category through its commercially successful and robust 220 MWe PHWRs. In contrast, no SMR product has yet been deployed in numbers. A sizable order book is a prerequisite for an SMR business. Having said that, there are a number of retiring coal plant sites that could be leveraged, provided the design of the reactors is safe that there would be no anxiety about evacuation in case of accidents. Moreover, most of the sites would not have space for an exclusion radius. India should thus consider only such SMRs that can meet these criteria and are fully manufactured in India to remain economically competitive. The AHWR-300-LEU, which was fully developed, met such criteria along with use of thorium. Unfortunately, that has not been pursued.

It is worth recognising that most of what is stated above would necessarily mean delivery by our laboratories like Bhabha Atomic Research Centre, IGCAR, etc. That needs to be ensured. The private sector, while it needs to be mobilised to scale up the programme has at best, a secondary role. The reverse would cause irreversible damage.

Read complete article on website indianexpress.com

Protracted Strife Affecting Israel's 'Brand' Status

By Vappala Balachandran

The author is Former Special Secretary, Cabinet Secretariat.

On 9 September 2003 I wrote an "Open Letter" to the visiting Israeli Prime Minister Ariel Sharon in the form of an Op-Ed in a leading daily "Remember Gandhi, Mr. Sharon", coinciding with his four-day visit from 8 September. This was the first official visit of an Israeli Prime minister to India after elevating diplomatic relations.

Prime Minister Atal Bihari Vajpayee accorded a ceremonial welcome and said that Sharon's visit "would pave the way for further consolidating bilateral ties". Recognising large scale protests against Sharon's visit, Vajpayee said that "there was no dilution of the country's stand on the Palestinian issue". However, Sharon had to cut short his visit and fly home on 10 September due to terror attacks which killed 14 people in Israel.

Sharon's visit had ignited several protests in India as his provocative march on the Temple Mount (Al-Aqsa) on 28 September 2000 had disrupted the ongoing peace talks between the then Israeli Prime Minister Ehud Barak and Palestinian leader Yasser Arafat and had paved the way for the Second Intifada. His march was also meant to whip up passions to dislodge Barak's Democratic Party led coalition from power. As a result, Sharon became prime minister of the rightist Likud led coalition after the elections in February 2001. In 2005 Sharon would split Likud and float "Kadima".

What caused anger against Sharon all over the world was his major military invasion, deep into the West Bank, in March 2002, in defiance of American and European advice to him to withdraw from Palestinian territories. Israeli helicopters fired 20 missiles at the Jenin refugee camp. Sharon justified it after a wave of Palestinian suicide bombings.

In that process Sharon occupied several Palestinian towns which finally resulted in Arafat being confined "to his one-square-block compound in Ramallah, where he would remain until the final days of his life" (2004) as the American National Public Radio said later.

In my letter I reminded Sharon that his violent reprisals against Palestinians in the past like the 1953 "Qibya" and "Al Auja" raids, the 1971 "Pacification of Gaza" or aiding the 1982 Sabra and Shatila massacres by Phalangists in Lebanon, had not brought any comfort to the Jews in the form of peaceful life. I had said: "These excesses have not made the security situation in your country any better. An average Israeli is frightened to go out for shopping or a family meal for fear of suicide terrorist lurking somewhere". I pointed out that a traumatised society would lose its direction, affecting its morale.

Contrasting this situation in India, where Gandhiji's message of peace was deep rooted, I also quoted Israeli documentary film maker David Ofek telling an Indian daily that in Mumbai "people have been more restrained, without voicing any hatred, which is very healthy" even after the Mumbai August 2003 "Gateway- Zaveri Bazaar" bomb blasts which killed many. Ofek had compared this situation with Israel where "hatred and aggression" marked Israel's reaction to terrorism, instead of "questioning ourselves as to why terror attacks happen". He felt that Israeli society had "lost its orientation and panicked".

Has this aggression and instability affected Israel's fame for productivity and innovation among the comity of nations? It would be so if we read "Jerusalem Post" of 5 February 2025 which published a shocking revelation that Israel was placed "among the world's most underdeveloped and unstable countries by the 2024 "Nation Brands Index" (NBI) published by Anholt Nation Brand Index. It says that the report "highlights a growing global sentiment that perceives Israel as a destabilising force rather than an innovative and progressive nation".

The study revealed a growing aversion to Israeli products, with many respondents indicating they were unwilling to purchase goods labelled ‘Made in Israel’. “This suggests a de facto boycott”. It quotes Motti Scherf, founder of Brand II that Israel has been “cast into the backyard of global affairs”.

Article first published in Lokmat Times Nagpur Main on 9th Feb. 2025

Chinese Checkers - Weaving a String of Pearls Around India

By Lt Gen Prakash Katoch (Retd.)

The author is an Indian Army veteran.

Viewing the Chinese projects in Nepal's Terai region, and close to the strategic Chicken's Neck in Bangladesh, together with the one in the waters of Maldives, one can see that China's calculated moves seek to slowly encircle India.

Maldives has announced that an agreement has been signed to strengthen cooperation in the field of technology with China. The agreement signed between the Environmental Protection Agency (EPA) and China's South China Sea Institute of Oceanology has reportedly opened the doors for China to gather intelligence in the Maldivian waters (https://english.adhadhu.com/article/65217?fbclid=IwY2xjawInZXhleHRuA2FlbQIxMQABHZ2mDfj3OFBfBUje1E4RthKhX1PsjWdkJfL5wyqDxgo6GYovEAT7s5Z8Xg_aem_ibMZxDgxOlWIZdMBj_ByWA&sfnsn=wiwspwa).

Under this agreement, signed by Tourism and Environment Minister Thoriq Ibrahim on behalf of the Maldives, China is installing devices on the ocean floor to measure wind, ocean current, sound, salinity and temperature. But the real purpose could be recording and monitoring sonar signals, detecting vessels on the ocean surface and submarines under the sea, in addition to detecting aircraft and their altitude.

In return, China would be providing technological training to the Maldives. Notably, information and data obtained under this agreement by the Maldives cannot be passed on to third parties without China's consent. It may be recalled that Maldives' President Mohamed Muizzu had earlier scrapped the agreement signed by the previous government of Maldives with India to survey the seabed, chart coastlines and study ocean currents and marine life.

Chinese moves in Bangladesh

Concurrently, Bangladesh is veering towards awarding Beijing its Teesta River Comprehensive Management and Restoration project, with an estimated cost of USD 1 billion, for which Dhaka has asked a Chinese company to prepare a concept note by December 2025 and conduct feasibility study by 2026.

Teesta River spans 414 km from Sikkim and travels through the northern part of West Bengal before entering Bangladesh and later flows into the Bay of Bengal. India has built power projects on the Teesta River. An India-Bangladesh water-sharing agreement has not been signed all these decades and the Khaleda Zia-led Bangladesh Nationalist Party (BNP) has been holding protest rallies for India to give Bangladesh fair share of this river's water. BNP, having been the main opposition party to the Sheikh Hasina government, and a BNP delegation having visited Beijing, now wants the project to be awarded to China.

As part of the Teesta River Comprehensive Management and Restoration project, Bangladesh plans to dredge and develop its part of the river. India is also interested in this project but has yet to submit a formal proposal, whereas, according to one report, the Chinese company has already submitted its proposal. It goes without saying that China would have worked out the project weeks or perhaps months in advance. Bangladesh has yet to announce whether the project would be awarded to China or India.

The significant part is that this project in Bangladesh would be adjacent to the Chicken's Neck area of India, a narrow strip of land that separates India's northeast with other states to the west of the country. This needs to be seen in conjunction with a four-member team of senior officers from Pakistan's Army and Inter-Services Intelligence (ISI) visiting Rangpur district of Bangladesh, close to the Chicken's Neck in January 2025. As the crow flies, the distance between Rangpur district in Bangladesh to Siliguri in India is only about 130 km.

On February 19, 2025, Indian Army Chief, General Upendra Dwivedi, while emphasizing India's firm communication to Pakistan and highlighting the nation's clear stand on Jammu and Kashmir being an integral part of India post abrogation of Article 370, also expressed concern over a Pakistani Army-ISI delegation's visit to areas in Bangladesh close to the Siliguri Corridor.

Those who think ISI had departed Bangladesh after the liberation of that country need to think again. During the BNP governments in Bangladesh, state-supported anti-India terrorist camps were run in Chittagong Hill tracts with instructors from Pakistan's ISI and Al Qaeda, including Pervez Musharraf, who later became Pakistan's Army Chief and President. The ISI, therefore, has deep roots in Bangladesh. Moreover, Rajeev Bhattacharya writes in his book 'ULFA – The Mirage of Dawn' that Pakistan's ISI continued to have considerable influence in Bangladesh, despite the Sheikh Hasina-led Awami League government, through contacts with Bangladesh's Directorate General Foreign Intelligence (DGFI) and other intelligence agencies, and that element of India's northeast militants remain untouched in Bangladesh.

Chinese moves in Nepal

A few years back, Nepal awarded the contract for oil exploration in the Terai region of Nepal bordering India, discounting India's ONGC which was also a bidder. It is common knowledge that Chinese projects on foreign soil are either executed by the PLA (in disguise) or by China-owned companies.

Viewing the Chinese projects in Nepal's Terai region, and close to the strategic Chicken's Neck in Bangladesh, together with the one in the waters of Maldives, one can see that China's calculated moves seek to slowly encircle India.

Read complete article on website southasiamonitor.org

The Story of India's Atomic Slide – and an Opportunity to Bounce Back

By C. Raja Mohan

The author is a contributing editor on international affairs for The Indian Express

Budget decision to amend laws governing atomic energy was overdue. It is a chance to open up the sector and exploit its potential.

In her budget speech on Saturday, Finance Minister (FM) Nirmala Sitharaman announced the decision to amend the two atomic Acts that have paralysed the prospects of nuclear power in India. The long-overdue decision has not come a day too soon, as the world moves towards reviving the nuclear energy industry.

The story of India's atomic slide is a tragic one. It is impossible to believe that India was the second Asian nation to build a nuclear power plant in 1969 at Tarapur — just after Japan and long before China. It also built up an impressive nuclear research and development programme in the 1950s and 1960s with significant assistance from its Western partners. At the peak of nuclear optimism in 1970, India hoped to generate 10,000 MW of atomic power by 2000. Twenty-five years after that deadline, India's nuclear power sector is limping along at about 8,200 MW. China's installed nuclear capacity today is about 58,000 MW. South Korea has 32,000 MW. China and South Korea are now major exporters of nuclear reactors. The UAE, which launched its nuclear power programme less than a decade ago, has 5,200 GW of nuclear capacity, centred around South Korean reactors.

Through the last decade, Delhi has repeatedly revised the targets for nuclear capacity but could not realise them. The FM has now set a new target of 1,00,000 MW by 2047. She was realistic enough to recognise that this is not possible without rewriting the two atomic Acts that provide the legal framework for nuclear energy in India: The Atomic Energy Act (1962) and the Civil Liability for Nuclear Damage Act (CLNDA) of 2010.

If early policy moves in the late 1940s and 1950s laid the foundation for the development of nuclear energy in India, unfortunate developments — external and internal — as well as major political bungles have helped create the current nuclear impasse.

The private funding from the Tatas, at the request of Homi Bhabha, set the stage for nuclear research in the early 1940s even before the atomic age dawned formally with the bombing of Hiroshima and Nagasaki. The policy of creating internal capacities through foreign collaboration gave India a head start in atomic energy development in the 1950s. From the turn of the 1970s, India's atomic problems began to multiply.

One part of the problem was the change in the global order on nuclear energy cooperation when the Nuclear Non-Proliferation Treaty came into force in 1970. The NPT froze the number of nuclear-weapon states at five (those who had already tested atomic weapons before 1967) and began to impose restrictions on the transfer of nuclear technologies to the rest of the world. If India's nuclear adventure flourished in the era of atomic internationalism, it began to wilt under external pressures from the 1970s. If India had done a nuclear test before January 1967, it would have been on the right side of the nuclear divide. But the inability or unwillingness to become a nuclear-weapon power put it on the wrong side. (There are reports that US President John F Kennedy had offered to help India conduct a nuclear weapon test in 1963, but Nehru had turned him down.)

When India did conduct a nuclear test in 1974, it made matters worse for itself. Delhi's too-clever-by-half claim that its nuclear test was for peaceful purposes did not impress its hostile neighbours — Pakistan and China. The latter intensified its atomic collaboration with the former. The result: Pakistan's nuclear arsenal built with Chinese cooperation. The rest of the world tightened nuclear sanctions against India, which was seen as a major threat for nuclear proliferation.

India's ideological and policy confusions put it in the worst of all worlds — it was neither a "nuclear" fish nor a "non-nuclear" fowl. It took another quarter of a century for India to break out of this nowhere land.

India finally conducted five nuclear tests in May 1998 and declared itself a nuclear-weapon power. Although they brought a new set of sanctions, the tests opened the door for a reconciliation with the US and the global nuclear order. After initial anger, Washington began to explore the prospects for nuclear accommodation with Delhi. During 2005-08, the George W Bush administration helped craft a framework in which India could keep its nuclear weapons and resume civilian nuclear cooperation, which it had been denied since 1970. The US had to do some heavy lifting to change the domestic non-proliferation law and international norms to facilitate India's release from the nuclear jailhouse. But before India could celebrate, its political class, in a spectacular act of collective self-harm, shot itself in the foot by passing the CLNDA in 2010. If the civil nuclear initiative created conditions for rapid renewal of nuclear power generation, the liability act made it impossible for domestic private investment and foreign collaborations.

The global norms mandate that all liability in the event of an accident should be channelled to the plant operator to ensure swift compensation to the victims. The CLNDA, in contrast, enshrined the operator's right to legal recourse against component and equipment suppliers in the event of an accident. The Modi government, which came to power in 2014, sought to provide some solution to finesse the problem, but it has not attracted foreign and domestic capital to participate in India's nuclear power programme. Over the last decade, it has become increasingly clear that without amendments to the CLNDA, there is little prospect for an expanded contribution of nuclear power to India's energy needs and a smooth green transition.

Beyond the civil liability act, there is a deeper structural problem ailing the Indian atomic energy programme. It is the fact that atomic energy activity is a government monopoly under the Atomic Energy Act of 1962. Total government control of atomic energy development might have made sense in 1962, but it does not anymore. The monopoly makes it impossible to generate the necessary capital for a massive expansion of nuclear power generation in India. Today, the Department of Atomic Energy (DAE) relies entirely on government funding.

It also prevents the creation of a nuclear ecosystem that can drive innovation, create economies of scale and develop networks of global collaboration to accelerate atomic power generation in India. Over the last seven decades, private- and public-sector companies like Tata, Godrej, L&T, Walchandnagar and BHEL have contributed by supplying critical equipment for atomic power plants. Today, they are in a position to take charge of building power plants on their own while relying on the DAE to provide some of the technologies.

Read complete article on website indianexpress.com

India is Proud of:

Sachin Kamlakar Karekar

Farmer from Ratnagiri, Maharashtra who revolutionized Turmeric cultivation in India

48-year-old farmer Sachin Kamlakar Karekar of Abloli village, 55 km from Chiplun, in Maharashtra's Ratnagiri district has transformed the Turmeric cultivation in India.

The variety, SK4 known as super turmeric, is a high-yielding turmeric cultivar created by Karekar. He was among a select group of grassroots innovators honoured by President Draupadi Murmu at the 11th Biennial National Grassroots Innovation and Outstanding Traditional Knowledge Awards.

With more than 30 varieties grown in different states, SK4 is the newest addition to the family of Curcuma Longa — the yellow spice we use in our food, ceremonies, and traditional Indian medicine.

"In 1998, I planted the local variety, Kadja, and observed a few plants that were early maturing and possessed good vigour. I harvested the produce from these plants and selected the ones untouched by disease, had bigger rhizomes, were bright in colour and high yielding," says Karekar

By 2008, Karekar was able to develop a superior clone with all the desired traits and named it SK-4, taking the first letter of Shendge Kaka, the farmer who initially gave him tubers of Sangli Kadapa variety, Special Konkan, and his own name.

The variety possesses an attractive bright reddish-yellow colour and has big-sized rhizomes. It is a short duration (160-170 days) variety suitable for high rainfall regions and with good tolerance of disease.

Numerous farmers in Sindhudurg and Raigad districts, along with Ratnagiri are presently cultivating this variety. One Vishram Mali (58) of Velamb village in Guhagar taluka achieved the highest output last year: turmeric pods weighing 8.15 kg from one sapling!

He has been propagating the variety for ten years now and regularly imparts training on plantation management to farmers.

During the NIF event held in New Delhi's Rashtrapati Bhavan farmers from Nandurbar, Vidarbha along with farmers from 13 states bought tubers of the SK-4 variety for cultivation.

With the Protection of Plant Varieties & Farmers Rights Authority (PPV&FRA) granted to SK-4 last December, Sachin Karekar has been recognised as a “plant breeder” and has the exclusive right to produce and sell the variety for six years.

Sachin Kamlakar Karekar was honoured by President Draupadi Murmu at the 11th Biennial National Grassroots