


## FOREST COVER & CLEANER ENVIRONMENT

Forest Survey of India (FSI), Dehradun, an organization under the Ministry carries out the assessment of forest cover of the country biennially since 1987 and the findings are published in India State of Forest Report (ISFR). The forest cover information is not available separately for rural and urban areas. The FSI has published a study on the decadal change in forest cover in seven major mega cities between ISFR 2011 and ISFR 2021. As per a written reply submitted in the Rajya Sabha by the Minister of State for Environment, Forest & Climate Change, Ashwini Kumar Choubey, it was informed that Ministry is implementing Nagar Van Yojana (NVY) since the year 2020 which envisages developing 400 Nagar Vans and 200 Nagar Vatika in the country during the period of 2020-21 to 2024-25 with an objective to significantly enhance the tree outside forests and green cover, enhancement of biodiversity and ecological benefits to the urban and peri-urban areas apart from improving quality of life of city dwellers with the funds under the National Fund of the Compensatory Afforestation Fund Management and Planning Authority (CAMPA).

The Ministry has approved 270 projects under Nagar Van Yojana with the total cost of Rs.238.64 Crore till date, which includes an amount of Rs. 57.14 Crore for creation of 97 Nagar Van/Vatika during 2022-23.

National Centre for Coastal Research (NCCR), an attached office of Ministry of Earth Sciences is collecting the real-time information on coastal water quality by deploying water quality buoys at 10m water depth in coastal waters. NCCR is also undertaking research activities in quantifying litter (mainly meso, macro and micro-plastics) in the beach, in the water column and sediment on the sea floor. An increase in the abundance of micro-plastics is observed along the east coast during the monsoon. The stations nearer to the river mouth had higher numbers of micro-plastics concentrations. The Beach litter survey revealed that the maximum accumulation occurs in the backshore than in the intertidal zone. Moreover, Urban beaches have higher accumulation rates than rural beaches. Under Beach Clean-up program/activity, it was found that the majority of the waste composition was contributed by single use plastics.

The Ministry of Environment, Forest & Climate Change (MoEF&CC) has notified Plastic Waste Management Rules, 2016, and its amendments, which provide the statutory framework for plastic waste management in the country. The Plastic Waste Management (PWM) Rules, 2016, prohibits manufacture, import, stocking, distribution, sale and use of carry bags and plastic sheets less than fifty microns in thickness in the country. There is complete ban on sachets using plastic material used for storing, packing or selling Gutkha, tobacco and pan masala. MoEF&CC had also issued Gazette notification on 'Guidelines on Extended producer responsibility for Plastic Packaging' and Plastic Waste Management (Amendment) rules, 2022 on 16th February, 2022 to all States/UTs and Ministries. Further, the Government of India has initiated several programmes such as 'Swachh Bharat Abhiyan', 'National Mission for Clean Ganga and Smart Cities Mission' in order to develop clean and sustainable environment which contribute towards the reduction in marine pollution. Under the Central Sector scheme Environment Education, Awareness and Training (EEAT) implemented till year 2021-22, more than 1 lakh Eco-clubs have been formed in schools and colleges to educate students and to spread awareness on environmental issues. Activities undertaken by Eco-clubs include plantation drives, cleanliness drives, celebration of important environmental days, awareness and capacity building on solid waste management through waste segregation, green pledges, etc. Further, clean coast campaigns are taken up regularly to create awareness among the public and stakeholders to keep the beaches and coastal areas clean.



OFF 'D' CUFF

### Watch, Listen, Learn

One never appreciates the earth unless one really lives with it, works with it, puts one's hand in the dust, lifting big rocks, stones; one never knows the extraordinary sense of being with the earth, the gigantic trees and strong grass, and the hedges along the road.

Everything was alive this morning. As we watched, there was a sense of great joy and the heavens were blue, the sun was slowly coming out of the hills, and there was light. As we watched the mockingbird on the wire, it was doing its antics, jumping high, doing its somersault, then coming down on the same spot on the wire. The watcher was no longer there, only the bird, grey and white, with a longish tail. The watching was without any movement of thought, watching the flurry of the bird that was enjoying itself.

We never watch for long. When we watch with great patience, watch without any sense of the watcher, watch those birds, those droplets on the quivering leaves, bees, flowers, and the long trails of ants, then time ceases, time has a stop. One doesn't take time to watch or have the patience to watch. One learns a great deal through watching — watching people, the way they walk, talk and their gestures. You can see through their vanity, or their negligence of their own bodies. They are indifferent, they are callous.

There was an eagle flying

-J Krishnamurti

The purpose of education is to make good human beings with skill and expertise... Enlightened human beings can be created by teachers.

-A. P. J. Abdul Kalam

# Pre-poll freebies-misuse of taxpayers' money, hampers financial sustainability

■ SOURAB PURI

Too put things in perspective, I think we should first have a clear understanding of what freebies actually are. Apparently, freebies are the delivery of goods and services or promises to deliver such goods and services, free of cost. Let us not confuse a freebie with any other state-run welfareist policy. As doing the welfare of citizens is the job of any democratically elected government, whereas a pre-poll freebie may amount to bribery under section 123 of representation of people act 1951.

Now the question emerges, what really is the difference between a freebie and any welfare scheme. Well, freebies are given right before the polling to garner votes in their favour by different political parties, thus it is premised on the principle of vote bank politics, while welfare policy irrespective of elections run across the year, day in and day out. Some might say that freebies are fulfilling needs of the people but i argue why such needs has to be met right before polling and don't you think that poor and hungry are not in need of food on other days. Freebie is free electricity, not 24 hours electricity, it is

free water, not 24 hours tap water, and it is free healthcare, not affordable healthcare.

Nonetheless, most of the time political parties make illogical announcements before elections for which later on state exchequer has to bear its consequences. Like happened in the state of Punjab where public debt is extremely high touching 54 per cent of its state GDP mark and in the state of Maharashtra where a farm loan waiver cost nearly Rs 51,000 crore to the state's finances.

This Revadi culture as termed by our Prime Minister has a severe impact on the credit culture of the Indian economy which was already confirmed by former RBI Governor Raghuram Rajan where borrowers have the perception that their loans will be eventually written off so they should not pay their dues. This is the biggest reason for the looming NPA crises on public banks. Along with this power discoms are no exception as they too are battling with high debts, like in the case of Tamil Nadu, where the state power discom company is under the mounting debt of nearly Rs 12,000 crore causing a massive blow to the state's

economy. Nothing comes free as someone has to pay for it and here it is taxpayers of the country and all this sends a wrong message to the taxpayers reflecting that their money is not getting utilised judiciously. It creates a vicious cycle of both tax evasion and tax avoidance, causing huge disruption in the financial sustainability of the economy. Along with this, it does no good to the Indian political spectrum, as said by the Supreme Court in Subramanian Balaji vs Government of Tamil Nadu, that such unrealistic poll promises are serious issues that disrupt the level playing field and jeopardise the principle of free and fair elections, as this gives an undue advantage to the party in power because promises made by them sound more convincing to the general masses. Apart from the economy and politics of freebies, it also has a detrimental impact on the environment in which we all live. Like in Punjab, Haryana, Rajasthan where farmers are witnessing sinking groundwater which is the result of the misuse of free electricity (again a freebie). We should learn from the failures of other countries like Venezuela or Zimbabwe, as similar freebie culture caused hyperinfla-

tion where buying a loaf of bread can empty the pockets of many. Now India is a developing country, we have limited resources and aspirations to grow faster and become a 5 trillion dollar economy by 2024. Here taking economically prudent decisions and optimum use of limited resources are of cardinal importance and the state's expenditure in a well-calibrated manner plays a fundamental role.

So it is important that government should make policies that benefit those who are in actual need, rather than a freebie which goes to almost all potential voters. Now the question comes, who will bell the cat, I think the ruling government should take the lead and devise any code of conduct or statute for establishing an apex body which should work autonomously to check the freebie culture emerging in our country. And as a society, it is for us to decide, whether we want a society full of unproductive people relying on freebies or we need a society of productive, hardworking and creative people by keeping in mind the wisdom that 'If you give a man a fish, you feed him for a day. If you teach a man to fish, you feed him for a lifetime.'

# Modi's long association with Pramukh Swami Maharaj

■ VINOD CHANDRASHEKHAR DIXIT

Prime Minister, Narendra Modi recently addressed the inaugural function of Pramukh Swami Maharaj Shatabdi Mahotsava year-long worldwide celebrations hosted by BAPS Swaminarayan Mandir from 15th December, 2022 to 15th January, 2023 in Ahmadabad. Chief Minister of Gujarat Bhupendra Patel, Governor of Gujarat Acharya Devvrat, Mahant Swami Maharaj and Pujyalshwarcharan Swami were also present on the occasion among others.

Pramukh Swami Maharaj was a guide and guru who touched countless lives across India and the world. He was widely respected and admired as a great spiritual leader. The well-known guru wielded influence not only in India but also overseas, especially in the United States. Pramukh Swami Maharaj vowed to remain loyal to the Sanstha and fulfill his duties. From his childhood days, he was drawn to the spiritual way of life and started performing Puja at the age of seven. After schooling, he would spend his free time in temples, one of which was the Swaminarayan Mandir. He received initiation as a Hindu Swami in 1940 from Shastri Maharaj, the founder of BAPS, who later appointed him as President of BAPS in 1950. Yogi Maharaj declared Pramukh Swami Maharaj to be his spiritual successor and guru of BAPS, a role

he commenced in 1971.

Modi conveyed his feeling of the presence of divinity and grandeur of resolutions and pride for the heritage. While paying tribute to Pramukh Swami Prime Minister Narendra Modi says "I pay my tributes to Pramukh Swami Maharaj on his Jayanti. I consider myself blessed that I got the opportunity to interact with him on multiple occasions and also got a lot of affection from him. He is globally admired for his pioneering service to society." He emphasised saying that "Pramukh Swami Maharaj Ji was a reformist. He was special because he saw good in every person and encouraged them to focus on these strengths. He helped every individual who came in contact with him.

Modi once said that he used to take Pramukh Swami's guidance during his chief ministerial stint. "Once he asked for tapes of my speech and after listening to them, he suggested what things I should not say in my political speeches. While I was initially baffled, I later realised that Bapa was concerned about my development". Pramukh Swami used to inquire about each and every minute detail of the Narmada dam project. Wherever he is now, he must be very satisfied with the completion of the Narmada project," said Modi, underlining his government's biggest achievement for

Gujarat.

Pramukh Swami Maharaj took his values-based message and his social services to all, including those classes often neglected. Through social service activities such as de-addiction drives, education provision and healthcare services, he provided self-respect and a new direction to the lives of even the most deprived people. He understood the problems people face in their everyday lives and empathized with their pain. His success is not measured by the awards he received nor by the recognition, he accumulated. He was and remains the torchbearer of human values and Indian culture throughout the world. Gujarat Chief Minister Bhupendrabhai Patel paid his tributes to Pramukh Swami Maharaj saying, "By his simple living and with his message of love, peace, harmony, truth and faith; Pramukh Swami Maharaj was an inspiration to millions." One thing is clear that the festival Pramukh Swami Maharaj Shatabdi Mahotsav has been made possible through the generous support of more than 250 farmers and builders who have generously offered their land for use as the festival site. Pramukh Swami Maharaj who lent his ears to millions of individuals around the world and gave courage to overcome personal battles will always be remembered.

# Impact of climate change on agriculture

■ DR BANARSI LAL

Agriculture plays an immense role in ensuring food and livelihood security and it accounts for a significant share of India's Gross Domestic Product (GDP). It engages around two-thirds of the population in gainful employment. Many industries such as food, milk processing, sugar, textiles, jute etc. depend on agricultural production. As agriculture is having its close linkages with other economic sectors so agricultural growth has a multiplier effect on the entire national economy. Presently, the threat of climate change poses a serious challenge for sustainable agricultural growth. This threat is compounded due to accumulated greenhouse gases emissions in the atmosphere, anthropogenically generated through long-term intensive industrial growth and high consumption lifestyles. As the international community is making strenuous efforts to deal with this threat, India needs to develop a strategy for adapting to climate change and its variability in order to ensure ecological sustainability. A resilient agricultural production system is required to sustain productivity in the event of extreme climatic variability. The Indian farmers have evolved many coping mechanisms over the years but these have been fallen short of an effective response strategy in dealing with recurrent and intense forms of extreme climatic events on the one hand and gradual changes in climate like rise in surface temperatures, changes in rainfall patterns, increase in evapo-transpiration rates and degrading soil moisture conditions on the other. The need of the hour is, therefore, to synergise modern agricultural technologies with the indigenous technical knowledge of the farmers to enhance the resilience of the Indian agriculture to climate change.

Climate Change refers to the statistical variations in the properties of the climate system such as changes in temperatures, rainfall etc. due to natural or human causes over a long period of time. Climate change drastically alters the distribution and quality of natural resources thus adversely affecting the livelihood security of the people. In order to sustain agricultural growth to mitigate food requirements, policies and strategies need re-orientation with appropriate feedback mechanisms that are embedded in the policy spectrum for not only meeting food grain and buffer stock requirements but also to ensure livelihood security in times of catastrophic incidents. According to Intergovernmental Panel on Climate Change (IPCC), the adverse impact of climate change due to rising temperatures and extreme weather events would be on the agricultural production. Consistent warming trends and more frequent and intense extreme weather events are being observed across India in the recent decades. The catastrophe of flash floods and land sliding in Jammu and Kashmir

on 6th September, 2014 is the best example of climate change. Several areas such as coastal areas, Indo-Gangetic plains and the drought and flood prone regions of the country have been identified as risk prone due to the impacts of climate change. Agricultural crops, livestock, fresh water and the marine ecosystem all are likely to be affected due to change in climate. Such climatic fluctuations adversely affect agricultural sustainability resulting in unforeseen situational shortages which could also impact other economic sectors. Vulnerability of India in the event of climate change is more pronounced due to its ever increasing dependency on agriculture, excessive pressure on natural resources and poor management mechanisms. The warming trend in India over the past 100 years (1901-2000) is estimated to be 0.4 degree C. The projected impact of further warming is likely to aggravate yield fluctuations of many crops. While in the short-run the impact may not be severe but most crops are expected to decline in yield after 2020. A one degree Celsius rise in mean temperature would likely to affect wheat yield in the heartland of green revolution. Negative impact on yield of wheat and paddy in certain parts of India due to rise in temperatures, increase in water stress and reduction in the number of rainy days has been observed. Parts of western Rajasthan, southern Gujarat, Madhya Pradesh, Maharashtra, Northern Karnataka, Northern Andhra Pradesh and Southern Bihar are expected to be more vulnerable in times of extreme climatic events. It is estimated that irrigation requirements in arid and semiarid regions would likely to increase by 10% for every 1 degree rise in temperature. Rise in sea level would also likely to have adverse effects on the livelihood of fishermen. The effect can even be more detrimental if no adaptation is taken. The negative impact on agricultural production will imply significant percentage fall in the annual GDP and its fallout for livelihood security in the agricultural sector and other economic sectors. As the short term mitigation measures demand immediate attention, the complexities of abiotic stress on crops and livestock in the long term would require intensive research to effectively address the adaptation processes required for making our production systems resilient to climate change.

Sustainable agricultural practices maintain environmental and soil health and also economic profitability. Thus, stewardship of both natural and human resources is of prime importance. In other words, sustainable agriculture involves the processes that would enable us to meet the current and long term societal needs for food, fiber and other resources, while maximising benefits through the conservation of natural resources and

maintenance of ecosystem. The priority of exalting human capabilities at the individual level and ensuring food security at the national level, through efficient and equitable use of resources are compatible with the concept of sustainable agriculture. Inter-annual, intra-seasonal, monthly and daily distribution of climatic variables such as temperature, precipitation and humidity play a pivotal role in most of the physical, physiological, chemical and biological processes that increase productivity in agriculture, livestock, forestry and fisheries sectors. Any change in these climatic determinants not only leads to adverse impact on food security and nutrition but also affects the livelihood of millions depending on the agricultural sector. Agriculture and allied sectors, thus, exhibit high sensitivity to climatic variability and changes. While in the long run, climate change is likely to exacerbate current stresses there by increasing the vulnerabilities in food production and livelihoods of farming communities, even the short-run climatic variability and occurrence of extreme weather events would affect agricultural production, livestock and fisheries. Climate change is also likely to significantly alter the dynamics of extreme events such as tropical cyclones, storms surges and extreme rainfall events; possibly increasing their frequency and intensity. It is estimated that low lying regions, including small islands, will face the highest exposure to rising sea levels, which further will increase the risk of floods bringing more cultivable area under the risk of submergence and degradation. Due to excessive rainfall hilly areas are prone to land sliding followed by flash floods in the rivers.

A number of environmental, social and economic factors contribute to the differential vulnerability of diverse farming systems. Rainfed areas, in particular, having complex cropping systems operating under fragile ecological conditions, constitute about 60 % of net cultivated area. Poverty levels and high population density are other important factors that increase the vulnerability of the Indian agricultural system to climate change. Multiple stresses on natural resources such as soil erosion, salinisation of irrigated lands, degradation of pastures, water pollution and overexploitation of forest stocks contribute to low resilience in the Indian farming systems. As most of the agricultural production takes place in rural areas by engaging people from the marginalized sections of the society, the crop management capacity of the farmers during climatic extremities is limited. Crop management response of the Indian farmers to natural shocks such as droughts are often of distress through sale or mortgage of farm assets like livestock or land. Constraint in accessing institutional or formal financial mechanisms for agricultural credit is another

important factor that contributes to high vulnerability of the sector. Similarly, agricultural markets and food supply chains in India are mainly in the unorganized sector which is often dominated by intermediaries thereby depriving the farmers of their due remuneration. Post-harvest losses due to inadequate storage and transport infrastructure, lack of market information and intelligence reduce the profitability of farming systems. Although there are mechanisms to provide adequate information access on weather and crop management, they often operate on a delayed mode and lack feedback mechanism. The combination of high vulnerability and low adaptive capacity makes enhancing resilience in the Indian agriculture and allied sectors a challenging task.

Climate change alters the natural balance of local and global ecosystems and infringes on human settlements. It is expected that vulnerable groups such as poor will face food insecurity, loss of livelihood, hardships due to environmental change and extreme climatic events such as drought, floods, storms, cyclones and land sliding. The overall impact of climate change on our food production systems and economy is expected to be high as the agriculture and its allied sectors still accounts for a large share of gross domestic product (GDP) and employment. Although agriculture contribution to GDP is falling, it still accounts for a significant share. For the States like Punjab, Uttar Pradesh and Haryana, the percentage share of agriculture and allied activities in state domestic product is more than 30 percent. The Indian agriculture now faces the challenge of ensuring food security amidst constraints such as stagnating net sown area, deterioration of land quality, reduction in per capita land availability etc. As a result, agricultural productivity has been witnessing stagnation in recent years. Besides, issues such as competing demand for water in the context of changing demographics and its various end uses, further aggravates the degree of risks in the agriculture sector. These have considerable implications for food and livelihood security and as agriculture production being risk prone, may lead to migration from rural to urban areas. Fostering rapid, sustainable and broad-based growth in agriculture is thus a key priority keeping in mind the overall socio-economic development trajectory of the country, especially in the light of existing vulnerabilities that relate to a shrinking land resource base, additional stresses arising from the non-agricultural sector and issues emerging due to changing climate. This necessitates a strategic approach with a renewed vision and redefined focus.

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