

NAP ON CLIMATE CHANGE

The National Action Plan (NAP) on Climate Change (NAPCC) was launched by the Government of India in 2008 as a strategic framework to address the challenges of climate change while ensuring sustainable development. The plan outlines a series of measures to promote energy efficiency, environmental sustainability, and climate resilience through national policies and initiatives. Given India's vulnerability to climate change, the NAPCC plays a crucial role in guiding both adaptation and mitigation efforts.

At the heart of the NAPCC are its eight core missions, each designed to tackle specific climate-related concerns. The National Solar Mission (NSM) focuses on expanding solar energy generation to reduce dependence on fossil fuels. The National Mission for Enhanced Energy Efficiency (NMEEE) aims to lower energy consumption and promote energy-saving technologies. The National Mission on Sustainable Habitat (NMSH) emphasizes eco-friendly urban planning, waste management, and energy-efficient buildings.

Water conservation is a key priority, addressed through the National Water Mission (NWM), which seeks to improve water use efficiency and promote sustainable management of water resources. Recognizing the importance of biodiversity and fragile ecosystems, the National Mission for Sustaining the Himalayan Ecosystem (NMSHE) is dedicated to preserving the Himalayan region. Additionally, the National Mission for a Green India (GIM) focuses on afforestation, ecosystem restoration, and increasing forest cover to enhance carbon sequestration.

The National Mission on Sustainable Agriculture (NMSA) is another significant initiative under the NAPCC, aiming to promote climate-resilient farming techniques and ensure food security. Meanwhile, the National Mission on Strategic Knowledge for Climate Change (NMSKCC) fosters research, technology development, and knowledge-sharing to strengthen climate action. These missions collectively contribute to India's efforts in addressing climate challenges while promoting economic growth and environmental sustainability.

In addition to national-level missions, State Action Plans on Climate Change (SAPCCs) have been formulated to address region-specific climate vulnerabilities. These state-level plans ensure localized climate adaptation measures, complementing the broader national framework. Furthermore, various sectoral initiatives, such as promoting electric mobility, energy efficiency programs, and climate-resilient infrastructure, are being implemented to enhance climate resilience across different sectors.

Despite significant progress, challenges such as funding limitations, policy implementation hurdles, and the need for greater public awareness remain. To maximize its impact, India must strengthen inter-sectoral coordination, leverage technological advancements, and enhance global partnerships. As the nation continues to evolve its climate policies, the NAPCC remains a cornerstone of India's commitment to building a sustainable and climate-resilient future.

Empowering Rural Women through Agripreneurship

■ DR. BANARSI LAL

The contribution of women in business has been increasing tremendously at global level since the last ten years. In present era, women entrepreneurs especially women agripreneurs, represent the fastest growing category of entrepreneurship across the globe. It has been observed that women agripreneurs have strong will power, skills, risk-taking attitude and appetite for the hard work, with grit and determination to succeed. Startup India, Standup India campaigns have been enhancing the women morale and enthusiasm to do something productive for their family, local community and to the nation. The number of women participating in the entrepreneurship activities has been relatively less, when compared to the number of their men counterparts, for a number of reasons. It has been observed that women's participation in economic activities is about 25%, while they constitute over 48% of the Indian population. Forbes India Report 2019 indicated that Indian women leaders occupy about 30% of senior corporate leadership positions in India which is higher than the global average of 24%. There is an urgent need to design the institutional strategies to support the ecosystem for promoting women entrepreneurship in general and women agripreneurship in particular, which is essential for the growth and development of India.

Agripreneurship is the synthesis of agriculture and allied sectors and entrepreneurship to generate commercially-viable products and services and high-value businesses and processes. The agripreneurship comprises of creation, development, nurturing and expansion of the agri-business enterprises in agri-based and allied sectors. It includes entrepreneurial interventions of agri-tech, farming and marketing of agri-products in organised business practices. Women play the pivotal role in the integrated development of agriculture and allied sectors. Dr. APJ Abdul Kalam had said that 'Empowering women is a pre requisite for creating a good nation, when women are empowered, society with stability is assured. Empowerment of women is essential as their thoughts and their value system lead to the development of a good family, good

society and ultimately a good nation'. A Goldman Sachs Report (2018) observed that "Enabling women, particularly as entrepreneurs, benefits future generations because women tend to spend more on their children's education and health, which should boost productivity as well". A Report by the McKinsey Global Institute (2021) observed that the concerted efforts in minimizing the gender gap in workforce participation has the potential to add US\$ 12 trillion to global GDP by 2025. Women are the future of India's growth and development as they possess the multi-tasking skills, are predominantly focused, empathetic and good managers. Presently, the women in India contribute to about 14% of agri-business owners. It has been observed that more than 1/3rd of the total agri/rural start-ups are being managed by women agripreneurs. Increasing number of women agripreneurs are significantly contributing to the socio-economic growth, sustainable and holistic development of rural people. There is an immense scope for promoting women agripreneurship, especially because about 70% of agriculture and allied activities are predominantly managed by women.

In order to promote women agripreneurship, there is need of: (a) An institutional support mechanism (b) Access to the awareness and trainings (c) Funding sources (d) Marketing management (e) e-commerce platforms; (f) Innovative approaches to carry the products to the target customers etc. It is expected that women will dominate the workforce-trends and leadership positions in India in the upcoming years. The trend is almost similar in case of women agripreneurs. According to a recent report by India Brand Equity Foundation (IBEF), more than 30 million additional women-owned business enterprises are expected to create about 150 to 170 million jobs by 2030. The economic outlook is projected to grow dramatically as a consequence of this enabling ecosystem of women entrepreneurship. A number of agri-based business opportunities are being exploited in the agro-spheres such as agro-product processing, food packaging, export of fresh vegetables and fruits etc. This has got significant growth potential due to enhanced

availability of institutional micro-finance, trainings, workshops on agri-based and allied sectors. These provisions are progressively transforming the outlook of the agripreneurship industry, with special focus on women agripreneurship ventures. This is significantly bringing the 'inclusive growth of women agripreneurs'. Self-employed women are contributing significantly to the economic growth and development of any nation.

The Indian Government has initiated several programmes and has created various institutions/projects to foster the agripreneurship among the women in India. The 'Agri-Clinics and Agri-Business Centers Scheme' by the National Institute of Agricultural Extension Management (MANAGE), Hyderabad has given a boost to women agripreneurship. It has provided agri-extension activities and facilitated transfer of technology in agri-based enterprises. A significant number of trained men and women agripreneurs have been able to successfully establish and manage the agri-based technical/ consultancy extension services to farming community. The Indian Govt. has emphasized on innovative practices to nurture the agri-business enterprises among the rural women. This will create employment opportunities in a large scale, ensure social and economic equity, inclusive growth, achieve self-reliance through agri-based start-ups. 'Organic Sikkim' has been successfully making agri-farmers to earn about 20% higher income by eliminating the middlemen and discovering newer markets for their agri-products through Sikkim's organic retail stores. The stores are predominantly managed by women agripreneurs. Through the Rashtriya Krishi Vikas Yojana (RKVY) scheme, the Government has been promoting agripreneurship by extending technical and financial support. The scheme has enabled the localised incubation ecosystem through State Agricultural Universities(SAUs) and ICAR Research Institutions. Agripreneurs are given structured training under this scheme.

The National Bank for Agriculture and Rural Development (NABARD) has been managing a variety of agri-businesses and women agripreneurs enterprises, in partner-

ship with many NGOs, CSR (Corporate Social Responsibility) Projects of corporate and large organisations. Micro-Finance Institutions (MFIs) has promoted and nurtured thousands of micro, small and medium women agripreneurs. MFIs have helped transformation of lakhs of rural women in India. Women Entrepreneurs Access Connect Transform (WeACT) is a national level network of women entrepreneurs, where the interventions undertaken are executed in collaboration with Entrepreneurship Development Institute of India (EDII), Ahmedabad and Accenture Pvt. Ltd. along with many other partners. The institutionalised capacity building, integrated marketing linkages and digital support systems have enabled the rural women to have profitable and sustainable enterprises.

The efforts made by the Indian Government has significantly boosted the confidence of women agripreneurs and their overall development, self-reliance, socioeconomic empowerment and thereby self-actualisation. This will help in attaining balanced regional development as women agripreneurship are mostly from the rural areas. This is also reducing rural-urban migration. There are several challenges faced by women agripreneurs in starting and managing the agri-enterprises such as dual responsibility of home and enterprises, lack of support from the family, lack of information sources, lack of awareness and training, competition with established corporate players, lack of market awareness and knowledge, lack of knowledge in packaging, branding, accounting, the fear of failure, low risk-taking capacity etc. Women entrepreneurs also face infrastructure challenges such as lack of storage and warehousing, lack of electricity, lack of road connectivity etc. Indian women agripreneurs have been making significant strides in establishing agri-enterprises.Govt. of India has made many policies for their awareness and trainings, improving access to funds/credit facilities. and is supporting them to establish enterprises and start-ups. Women empowerment will be helpful in attaining the gender equality and breaking the gender stereotypes.

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Revival and Restoration of OPS

■ PUPU JI KOUL

The pension schemes and pensioners have rightly become the talk of the town as pensioners; government employees and even general populace are discussing the hot topic of pension schemes and the plight of the pensioners. Just a few days back, the central government has launched the unified Pension Scheme (UPS) as an alternative to the current National Pension Scheme (NPS) for its employees. Scheduled for implementation in April 2025, this new scheme presents a significant choice for employees who joined after 2004. Should they remain with NPS or transition to the new UPS? Detailed Comparison between the two Pension schemes follows. The National Pension Scheme - NPS was introduced in 2004 as a defined contribution scheme, replacing the old pension scheme-OPS. Under NPS, employees contribute 10% of their salary, while government contributes 14%. The corpus is invested in a mix of government securities, equities, and corporate bonds, similar to mutual funds. Upon retirement, 40% of the corpus must be used to purchase an annuity. The Unified Pension Scheme - UPS, on the other hand, offers a guaranteed pension of 50% of the average pay for the last 12 months for employees who have served for 25 years or more. The governments contribution under UPS is set at 18.5% ,with the employees contribution remaining at 10%.Additionally, UPS includes a minimum monthly payment for those who have worked for at least for 10 years, along with a lump sum retirement benefit. The UPS offers a more secure retirement plan with guaranteed benefits. Under UPS, employees with at least 25 years of service will receive a guaranteed pension of 50% of their average basic pay .In case of an employee's death, their spouse will receive a family pension of 60% of the employees' pension. Employees with at least 10 years of service will receive a minimum of Rs 10,000 per month. Under UPS, both the assured pension and family pension will be adjusted for inflation. Retirees under the UPS will receive dearness Relief .Employees will receive a lump sum payment at retirement. Benefits of switching to UPS are as given as: 1-Higher Government Contribution-One of the most significant advantages of UPS is the increased government contribution of 18.5%, compared to 14% under NPS .This boost in contribution is expected to result in a larger pension corpus, ensuring better financial security post-retirement. 2. Guaranteed Pension-UPS guarantees a pension equal to 50% of the average salary over the last 12 months of service. This assurance makes UPS a safer option for risk -averse employees ,particularly given the market volatility that can impact the returns on NPS investments.3. Minimum Payout and Lump Sum Benefits-For employees with at least 10 years of service, UPS offers a minimum monthly payout of Rs 10,000,providing a safety net for lower earning employees. Additionally ,the scheme includes a lump sum payment at retirement ,linked to the duration of service ,offering further financial support.4-

Investment Flexibility and Market Risks-While UPS offers a guaranteed pension ,it limits the potential of higher return that NPS might offer through market linked investments .Under NPS, employees can choose from various investment options ,including up to 65% in government securities,15% in equities, and reminder in corporate bonds .However ,these investments are subject to market risks ,and final pension may vary .In contrast ,UPS protects employees from market fluctuations ,providing a stable and predictable income stream in retirement .For many ,especially those nearing retirement ,this stability may outweigh the potential for higher returns under NPS .Some argue that UPS represents a step back from the market -linked reforms introduced with NPS .However ,UPS retains the core principle of a defined contribution scheme ,with additional safeguards to ensure a minimum pension .It also addresses the growing demand for a guaranteed pension among government employees ,without reverting to the unfunded liabilities of the Old Pension Scheme .One of the most significant advantages of UPS is the increased government contribution of 18.5% ,compared to 14% under NPS .This boost in contribution is expected to result in a larger pension corpus ,ensuring better financial security post-retirement .Under UPS ,employees contribute 10% of their salary while government contributes 18.5%.Under NPS, employees contribute 10% of their salary ,while the government contributes 14%. Under OPS, there is no contribution from employees ,government bears entire cost.UPS linked to all India consumer price index -CPI for industrial workers.UPS is set to benefit 23,00,000 government employees as per the government. The UPS is initially meant for central government employees and in due course of time it will be implemented in states and UT's as well. Union cabinet has decided and announced the UPS because the government employees were dissatisfied with the NPS because there were risks associated with it as it is linked to market risks and there is no guarantee of monthly pension and were demanding OPS ,but the government has devised UPS to remove resentment and insecurity of monthly pension. The finance department of Jammu and Kashmir UT has ordered the physical verification of the pensioners to be done by the concerned treasury officers and that too in these days of scorching heat and humid climate and the old pensioners were forced to stand in long queues in the office of the treasury officers and had to fulfill many formalities to get the PPO verified along with their physical verification. One wonders as to why is government putting the old pensioners to trouble off and on. The government must realize that pensioners had contributed and served a lot during their service and so this important section of the society should be respected and not put them to inconvenience and harassment now and then in the name of verification of their pension. Besides the government annually /sic monthly orders and instructs this poor and innocent lot to produce living certificates. The gov-

ernment should verify the life of the pensioners through digital application in these days of science and technology. A sizable number of Jammu and Kashmir government pensioners are living outside J&K in various parts of the country. The finance department of J&K has not given any method for the physical verification of such pensioners. This has created much harassment and discontent among these pensioners. The government should either exempt the pensioners who are putting up outside J&K from the physical verification or alternatively devise some easy method for these pensioners so that their pension and physical verification to done outside from Jammu and Kashmir that is at the places where they are living presently and it should be done through Jammu and Kashmir Bank or any other Bank where from these pensioners are drawing their monthly pension to save them from the harassment and inconvenience .Some pensioners have rightly said that PPO stands for pensioners prisoners order .Coming back to the UPS ,it is far better than NPS because there is no element of risk associated with the pension .Although there is higher yield in NPS because of market risk. A big number of pensioners are in favor of the NPS and it should be continued for these pensioners who favor it and they should be given the option of choosing between the UPS and NPS. However, the Unified Pension Scheme introduced by the Union cabinet under Prime Minister Narendra Modi, has sparked widespread concern and resistance among government employees. Government employees are now demanding the reinstatement of the OPS, which they believe is far superior. The OPS provided financial security and peace of mind in retirement, something the UPS fails to ensure. The continuation of the OPS for MPs and MLAs while denying it to the government employees has further fueled discontent. Employees are questioning the fairness of this selective application of pension policies. If the OPS is still viable and beneficial for lawmakers, they argue why is it not extended to those who serve the public in various government departments? It is in the fitness of things to mention that a pensioner's organization known as National Old Pension Restoration United Front is against UPS and it has submitted a memorandum to the Prime minister demanding reverting to OPS in the interest of the pensioners. Some argue that the OPS is the best because there is no risk associated with the pension and there is utmost security of minimum pension under the old pension scheme. Categorically speaking no pension scheme is full of benefits only but UPS is a better scheme having bigger contribution of 18.5% from the government .Still some consider OPS better given the financial security to the pensioners and therefore the government should concede the demand for restoring OPS to rid the market risks associated with NPS and give a thought to it and concede this demand of the pensioner's.

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Are we swallowing tiny plastic particles?

■ SURJIT SINGH FLORA

Air and water currents effectively transport nearly every particle or compound throughout the entirety of the Earth. The remarkable advancements in analytical techniques in recent years have enabled the detection of nearly any substance in the most minuscule amounts.

It is indeed a matter of great significance and utmost veracity. Plastic particles are now present in food, water, and even the natural environment. The breakdown of chemical compounds present in plastics is what leads to their incorporation into our food. BPA is the most widely recognized, though there are additional alternatives available. This elevation in estrogen levels may contribute to certain types of cancer and issues related to infertility. Engage with a wide array of literature and deepen your understanding of this topic. The extent of our vulnerability to large manufacturing corporations and the everyday products we utilize is truly astonishing.

Allow me to explain what 'microplastics' are. Microplastics are defined as tiny fragments of plastic that measure up to 5 millimeters in size. If the dimensions of the fine particles are smaller than 1 micrometre, they are referred to as 'nanoplastics'. The decomposition of buried plastic waste results in the release of toxic plastic particles into the environment. During the processes of respiration, consumption of food, or hydration, harmful plastic particles infiltrate our bodies. According to a research study conducted by the 'Worldwide Fund for Nature' at the University of Kassel, an individual ingests approximately five grams of microplastics each week, which is equivalent to the size of a credit card. What benefits does ingested plastic provide to the human body?

References: Microplastics originate from various sources, including coatings, paints, plasters, adhesives, cosmetics, water bottles, air, soil, water, wax paper envelopes, canned food, the washing of synthetic clothing in bathrooms, heating pulses and vegetables in plastic containers in microwaves, and single-use plastics.

Negative impacts on well-being: In a research study utilizing Raman electro spectroscopy, researchers initially detected plastic particles in placentas obtained with the consent of pregnant women. In the course of this analysis of the placenta, a total of 12 plastic particles were identified, with sizes varying between 5 and 10 micrometers. The particles exhibited either a spherical or irregular morphology, characterized by distinct coloration in their shape and structure. Three of these were recognized as stained polypropylene, a type of thermoplastic polymer; whereas only pigmentary particles were discernible in the other nine particles.

Recent findings in the Netherlands indicate that plastic particles have been identified in 16 out of 22 blood samples collected from adult volunteers. A comprehensive research study has identified 2,400 distinct chemicals present in plastic that is dispersed in the air and water

across the globe. A study conducted by the Plastic Soup Foundation regarding branded cosmetics and personal care items has disclosed that 86 percent of these products are composed of microplastics.

Plastic particles have the potential to lead to skin irritation, allergic reactions, endocrine disruption, hormonal imbalances, reproductive issues, cancer, and a variety of other health concerns. A considerable amount still awaits exploration regarding this matter. What are the effective strategies for safeguarding oneself against microplastics? In order to mitigate the presence of plastic particles in everyday life, several recommendations are being presented for your consideration:

Minimize the reliance on single-use plastics such as wax paper envelopes, disposable cutlery, and packaging boxes. Employ a vacuum cleaner during the cleaning process to effectively manage small plastic particles. It is inadvisable to heat any food in a plastic container using a microwave oven. Install high-quality filters in the washing machine. If feasible, consider washing clothes by hand.

Avoid cosmetics, personal care items, and toothpaste that are free from plastic to enhance your facial and body beauty. Minimize the use of bottled water; caregivers ought to refrain from bottle-feeding their children.

It is advisable to refrain from consuming seafood, as 386 species of aquatic animals have been found to be contaminated with plastic. Use loose tea rather than tea bags. Refrain from consuming canned food.

Reduce your purchase of synthetic garments and consider opting for more natural fabrics such as cotton. Minimizing plastic consumption in our everyday lives and progressively eliminating it presents a significant challenge for everyone.

Should we be worried about microplastics?

Indeed, there are numerous considerations that warrant concern regarding microplastics:

Health Risks: Microplastics may infiltrate the human body via multiple avenues, encompassing both ingestion and inhalation. Research has highlighted apprehensions regarding possible health consequences, including inflammation, toxicity, and hormonal disruption, though investigations continue to comprehensively elucidate the implications.

The environmental ramifications of microplastics are extensive, infiltrating ecosystems and adversely influencing wildlife. Marine animals may ingest these substances, resulting in physical harm and the potential for transfer up the food chain, ultimately affecting larger predators, including humans.

Persistence: Microplastics exhibit a notable resistance to biodegradation. These substances can persist in the environment for centuries, thereby contributing to enduring pollution and presenting significant threats to biodiversity.

Chemical Contaminants: Microplastics possess the capacity to absorb deleterious chemicals from their

surroundings, which may subsequently be released into the organisms that consume them, thereby exacerbating their potential toxicity.

Regulatory Response: An increasing number of governments and organizations are acknowledging the significance of microplastics, prompting demands for regulation and investigation into their origins and effects.

The ongoing investigation into the ramifications of microplastics reveals a pressing need for vigilance, given their pervasive nature and the possible implications for both human health and ecological systems. This situation calls for informed action and preventative strategies.

How can we fight against microplastics?

Advocate for Legislative Measures

It is imperative for local and national governments to take action by instituting bans on the use of microbeads in cosmetics and microplastics in various products.

Extended Producer Responsibility (EPR): Advocate for policies that ensure manufacturers are responsible for the entire lifecycle of their products, encompassing disposal practices.

Inquiry and Advancement

Promote Research: Advocate for scientific investigations focused on comprehending the effects of microplastics and innovating new biodegradable materials.

Innovative Solutions: Allocate resources towards technologies capable of capturing microplastics from wastewater prior to their entry into aquatic ecosystems.

Inform and Enhance Understanding

Community Education: Facilitate workshops and campaigns aimed at educating the public regarding the origins and effects of microplastics.

Encourage Sustainable Practices: Disseminate knowledge regarding sustainable consumption and lifestyle decisions that minimize plastic waste.

Engage in Clean-Up Initiatives

Participate in or coordinate community clean-up initiatives aimed at eliminating plastic pollution from our natural surroundings.

Engage in initiatives that systematically monitor and report on the levels of microplastic pollution.

Promote Sustainable Brands

Advocate for Sustainable Businesses: Select brands that emphasize sustainability and utilize little to no plastic in their packaging for your purchases.

Through the integration of these methodologies, both individuals and communities can play a crucial role in diminishing the presence of microplastics in the ecosystem.

Tackling microplastic pollution necessitates a comprehensive strategy that integrates prevention, enhanced waste management, technological advancements, and robust policy initiatives. Cooperation among governmental bodies, industrial sectors, academic researchers, and local communities is crucial for developing effective solutions.

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