

VISION FOR FUTURE

India has long harbored aspirations to host the Olympics, viewing it as a prestigious opportunity to showcase its burgeoning sports culture and infrastructure. While the country has yet to host the Games, there has been significant progress in its sports ecosystem, signaling a potential future bid. India's sports infrastructure has seen substantial improvements, with state-of-the-art facilities and training centers being developed across the country. The successful hosting of events like the Commonwealth Games in 2010 and the ongoing progress in other international sporting events underscore India's growing capabilities. The Indian Olympic Association (IOA) has expressed its commitment to building a robust sports framework that aligns with Olympic standards. Investments in grassroots programs, athlete training, and sports management are part of this vision. Furthermore, the government's focus on sports development through various schemes and initiatives aims to enhance India's chances of not only bidding for but successfully hosting the Olympics.

The prospect of India hosting the Olympics is seen as a catalyst for sports development, national pride, and international recognition, with the potential to inspire a new generation of athletes and promote a culture of sports excellence across the country.

The Farmers' Thursday

DR. PARVEEN KUMAR

Farmers' are the backbone of farm sector in India. The country owes its food and nutritional security to them. They are the one who toil in the scorching heat and the shivering cold to ensure that none of us goes to bed hungry. It is due to their hard work that country has now achieved self sufficiency in food grains production and is leading producer of many other commodities. In the last seven decades since independence, the growth trajectory of food grains production in the country has crossed many milestones. All this has been achieved through a mix of enabling policy environment, interventions, sustainable technologies and appropriate legislations. The Indian Council of Agricultural Research (ICAR) as the apex body entrusted with the responsibility of coordinating, guiding and managing research, extension and education in agriculture including horticulture, fisheries and animal sciences in the entire country has been playing a crucial role in conducting need based research through its various research institutes and dissemination of research findings through a dedicated network of Krishi Vigyan Kendras working in every district of the country. The KVKs work with a team of six scientist having expertise in different disciplines. Since the establishment of first KVK in 1974 at Pudukhery under Tamilnadu Agricultural University, these Kendras' have been at the forefront of technology dissemination. The KVKs lay strong emphasis on demonstrating new technologies in the form of seeds and other inputs through various Front Line Demonstrations (FLDs) and On Farm Trials (OFTs), skill development training of rural youth, farm women and farmers; provide latest technological inputs like seeds, planting materials and bio-products, conduct trainings/awareness and capacity of field functionaries of agriculture and allied departments. They continuously advise farmers on timely crop/enterprise related recommendations, including climate resilient technologies for enhancing their production and income levels. KVKs also diagnose and solve problems emerging from district agro-ecosystems and are perfectly located to lead adoption of innovations. As front line institutions at the district level these have grassroots level connect. Their contribution in the development of agriculture and allied sector and socio-economic upliftment of farming communities has been on many occasions acknowledged by national as well as international institutes and personalities. Honble Primeminister of the country Sh. Narendra Modi recently on the occasion of release of 109 high-yielding, climate-resilient varieties of 61 crops including 34 field crops and 27 horticultural crops, while lauding the scientific community of the country had remarked that the KVKs should proactively inform farmers about the new varieties developed by researchers every month. While interacting with scientific community present there at the National Academy of Agricultural Sciences (NAAS) complex, Prime Minister also advised the experts from the ICAR, agricultural universities and Krishi Vigyan Kendras (KVKs) to proactively interact with farmers and inform them about new varieties and technology once every month. Acting on the advice of Prime minister, the Indian Council of Agricultural Research (ICAR) has now decided to keep last Thursday of every month for holding interaction with the farming community. KVKs all across the country have been asked to take the lead and make last Thursday of every month as Farmers' Thursday. Starting from today, the last Thursday's of every month will thus be very special for the scientific as well as farming community of the country. Last Thursday's will now be Farmer's centric and they will see the scientists from various KVKs coming to them and their fields. Although already KVKs are working with the farming communities in the rural side but a day exclusively dedicated to farmers will lift the morale of the farmers and made them to believe that they are also being recognized and given much needed importance. The one day deliberations/interactions with the farmers will give the scientific community an opportunity to know the field level constraints faced by the farmers in real and practical situations. The one day interaction will infact a revival of earlier extension methodologies and approaches of 1970s like Farming System Research and Extension (FSR&E), Participatory Rural Appraisal (PRA), Action Research, Case study and Experiential Learning (EL). The KVKs have a multidisciplinary team of scientists and this one day interaction will give them an opportunity to go for transect walks across the villages to map the existing resources, the crops grown in the region, the farming system prevalent, identify the rate of adoption of different technologies and the gaps existing and to work towards bridging the gaps. Every village will be treated as a case study. The experts from KVKs can aid the farming community by way of real time diagnosis and treatment of various plant and animal diseases. Another advantage of this one day interaction lie in its participatory and bottom up approach which will give the farming community an opportunity to sit with the experts, present their problems, put forth their opinion and arrive at conclusions. In the formal settings the not so educated farmers sometime find it difficult to convey themselves and put forth their ideas in front of the dignitaries and delegates present there. Such interactions take place in an informal setting where Subject Matter Specialists (SMSs) of the Kendra will be in the shoes of farmers. It will be a live interaction where scientists are also learners and intend to know and learn from them. The farmers will feel free to express their thoughts and ask whatever comes in their mind. A query by one farmer many a times motivates the others also and then it becomes a live interaction. Moreover the interaction will also enrich the knowledge of the youth and school going students who do not know much about farming. This interaction will be a boon for all of them.

These interactions will further help in strengthening the links between research and extension and also with farmers. The initiatives of public, private and voluntary sectors for improving the agricultural economy of the region can be implemented in a holistic manner. A day once a month for the farming community is no doubt a noble initiative which will enhance the practical learning of both farmers as well as scientists. The only need is to ensure that the monthly interaction does not become a means of excursion for the scientists. The villages to be visited should be selected in advance and the farmers there should be intimated in advance to give them adequate time for preparing themselves to present their problems and discuss various issues with scientific community. The visiting team should also ensure that farm women are also a part of the monthly Thursday's interaction.

(The author writes on agriculture and social issues)

BioE3 Policy: Biotechnology for Economy, Environment and Employment

DR. JITENDRA SINGH



In a landmark initiative with far reaching futuristic implications, the Union Cabinet headed by Prime Minister Narendra Modi has approved the BioE3 (Biotechnology for Economy, Employment and Environment) Policy of the Department of Biotechnology (DBT) to foster high-performance biomufacturing for a clean, green, prosperous, and self-reliant Bharat. This will ensure for India a pioneering role in the global arena as one of the earliest torch-bearers of world's future economic growth.

The unsustainable pattern of material consumption, excessive resource utilization and waste generation have led to global cataclysms such as forest fires, melting glaciers, and declining biodiversity. Keeping in view the national priority of steering India on the path of accelerated 'Green Growth', the integrated BioE3 (Biotechnology for Economy, Environment and Employment) Policy is a positive and decisive step towards sustainable growth in the challenging backdrop of climate change, depleting non-renewable resources, and unsustainable waste generation. A major aim of this policy is to stimulate the transition of chemical-based industries to more sustainable bio-based industrial models. It will also promote a circular bioeconomy and provide an impetus to achieving net-zero carbon emissions by encouraging the utilization of waste from biomass, landfills, green house gases, etc by

microbial cell factories to produce bio-based products.

In addition, the BioE3 Policy will create novel solutions for fostering the growth of India's bioeconomy, facilitating scale-up and commercialisation of bio-based products; reducing, reusing, and recycling waste materials; expanding India's cohort of a highly skilled workforce; driving a surge in job creation; and intensifying entrepreneurial momentum. Salient features of the Policy include: 1) Encouragement and support to indigenous research and development-focused entrepreneurship across thematic sectors such as high-value bio-based chemicals, biopolymers & enzymes; smart proteins & functional foods; precision biotherapeutics; climate resilient agriculture; carbon capture and its utilization; and marine and space research; 2) Acceleration of technology development & commercialization by establishing bio manufacturing facilities, bio foundry clusters, and bio-artificial intelligence (Bio-AI) hubs; 3) Prioritizing regenerative models of economic growth and job creation with an emphasis on ethical & biosafety consideration; 4) Harmonizing regulatory reforms with global standards. India has demonstrated strong economic growth in the past decade and has tremendous potential to be amongst the global leaders of the 4th industrial revolution. Our bioeconomy has grown 13 folds from \$10 billion in 2014 to over \$130 billion in 2024. It is further expected to reach a market value of \$300 billion by 2030. The implementation of BioE3 Policy across diverse sectors is likely to further boost the country's bio-

economy, while promoting 'Green Growth'. The foundation for this will be laid by leveraging emerging technologies and innovations that result from nurturing the country's high-performance biomufacturing initiatives. Biomufacturing is primed to become an important pillar of the 'Make in India' initiative and will provide a transformative approach to meet the demands of 21st century. As a multidisciplinary endeavour; it has the power to unlock the potential of microbes, plants, and animal cells including human cells to develop bio-based products cost-effectively with a minimal carbon footprint.

It is envisioned that biomufacturing hubs will serve as centralized facilities that catalyze the production, development, and commercialization of bio-based products through advanced manufacturing technologies, and collaborative efforts.

This will create a community where resources, expertise, and technology can be shared to drive scalability, sustainability, and innovation of biomufacturing processes. These biomufacturing hubs will bridge the gap between 'lab-to-pilot' and 'pre-commercial scale' manufacturing of bio-based products. Start-ups will play a pivotal role in this process by bringing and developing novel ideas and feeding them into small and medium-sized enterprises (SMEs) and established manufacturers.

Biofoundry refers to the creation of advanced clusters for making biological engineering processes scalable - from the initial design and testing stages to pilot and pre-commercial production. Large-scale manufacturing of mRNA-

based vaccines and proteins for a wide variety of applications are some appreciable examples for which biofoundries could be valuable. These clusters will specialize in designing, constructing, and testing biological systems and organisms using standardized and automated processes.

Bio-AI hubs will serve as a focal point for encouraging and incentivizing the integration of AI in research and development. These Bio-AI hubs will provide biotechnological expertise, cutting-edge infrastructure, and logistical support for the integration, storage, and analysis of large-scale biological data using AI and machine learning. Making these resources accessible to experts from various disciplines (biology, epidemiology, computer science, engineering, data science, for example.) will facilitate the creation of innovative bio-based end products - be it a new variety of gene therapy, or a new food processing alternative.

Through these coordinated initiatives, the BioE3 policy will bring a surge in employment, particularly in tier-II and tier-III cities, where bio manufacturing hubs are proposed to be set up due to their proximity to biomass sources. By investing in India's economy, environment, and employment, this comprehensive policy will contribute towards the nation's Sankalp of 'Viksit Bharat'. This policy will serve as a benchmark that highlight show an effective science policy can actively contribute towards nation-building and development.

(The writer is Minister of State (I/C) Science and Technology)

Transformative Role of Rural Women in Agriculture

DR. BANARSI LAL

Since time immemorial, rural women have been primary food producers responsible for growing, harvesting and processing of staple foods and managing livestock. They can be considered as the custodians of diet and recipes ensuring nutritious and diverse food to the families. They work hard to grow and process the food. They play significant role in making decisions about the food purchases and meal preparations thus affecting the health and well being of the families. In order to reduce the rural poverty and achieve the food and nutritional security, there is dire need to promote the gender equality and empower the rural women. The women farmers play the key role in achieving the sufficient food grain production. If women are empowered with the same opportunity as men have, then food security can significantly improve. It is a complex problem but with the comprehensive approach, it can be achieved. In agricultural sector diverse opportunities can be created to empower them. They have less access of land and machinery. They are heavily involved in the domestic activities which are hidden economically. Empowering women is key to food security. Empowering women by strengthening a range of assets is critical for enhancing their welfare and improving the status of future generations. There is need to enhance the land rights of women. India is predominantly an agrarian economy. Women are the backbone for the rural development and they are considered as the vital part of the Indian economy. Women farmers contribute enormously to the Indian agriculture and allied sectors such as livestock production, post-harvest operations, horticulture, fishery, forestry, sericulture etc. This has been proved by various studies. Women comprise the largest percentage of the workforce in the agricultural sector but they do not have control over all the land and productive resources. Women constitute the 43 per cent of the world's agricultural labour force which increases to about 70-80 per cent in some countries like India. Women are the major producers of food in India. Around 70 per cent of the agricultural work is performed by the women. Women farmers contribute enormously to the Indian agriculture and allied sectors such as livestock production, post-harvest operations, horticulture, fishery, forestry, sericulture etc. Agricultural extension is one such effort taken by the government and non-government organisations that aims at reaching to farmers. The efforts include bringing about a positive change in knowledge, attitude and skills of the farmers by providing training and technical advice and also assisting them in taking decisions in adoption of new research results. Importantly, the clientele of such programmes and efforts is inclusive of both farmers and farm women. Managers of these programmes often consider men as farmers and women as farmer's wife thereby systematically marginalizing and understating women's productive role in agriculture. The agricultural extension service in India mainly focuses on male farmers and it has failed to tackle the great structural problem of invisibility of female farmers. Women farmers are bypassed by male extension workers. It would be correct to state that women farmers in India have failed to get their due share in extension services apropos their contribution to the Indian agriculture. Extension services in India need to be refined, modified and redesigned so as to reach farm women effectively. The purpose of agricultural extension serv-

ices can be achieved for sustainable rural development only if sincere attempts are made to provide and improve farm women's access to the available extension services thereby leading to their technological empowerment.

It has been observed from the last three decades that both the male and female labour force in agriculture is declining. The number of men in agriculture has decreased from 81 per cent to 63 per cent and women from 88 per cent to 79 per cent. The extension machinery in India can be classified in four heads namely (a) Extension services offered by the Indian Council of Agricultural Research (ICAR), (b) Extension services provided by the Ministry of Agriculture and Farmers Welfare, (c) Extension services provided by the Ministry of Rural Development and (d) Extension services offered by Non-Government Organisations (NGOs). Out of four extension systems, training and visit is the major extension system operating in India under the Ministry of Agriculture and Farmers Welfare for more than 30 years. Although this programme is in operation for so long, it still lacks necessary inbuilt structural arrangements for reaching female farmers. Contact farmers involved in this very programme are mostly male farmers and the numbering of female farmers is very low. It was reported that the extension needs of women were often perceived by the extension agents to be in the disciplines of home science, nutrition, childcare, tailoring etc. The information regarding to new farm technologies was seldom passed on to them. Various rural development programmes were launched in India from community approach in 1950s to special target group approach in 1970s. None of these programmes addressed to the specific needs of women farmers and remain concentrated on male farmers. In 1980s integrated approach was started that attempt to integrate women in the mainstream of development by structurally making them beneficiaries up to an extent of 40 per cent. A number of services supportive for women's socio-economic empowerment were implemented. These approaches were not directed towards fulfillment needs for agriculture-related services and concentrated mainly on the issue of employment and social empowerment. In 1993-94, a project aimed at gender-gap reduction among women farmers of the Northern India was launched by the government of India. The limited coverage of this project shortens its impact. Such programmes need to be appreciated for being the pioneering one in this regard. ICAR is another important system for transfer of farm technologies all over the country. This system has operated through various frontline extension programmes, all of which now have been merged with the Krishi Vigyan Kendras (KVKs) since April 1996. In KVKs, provision for special training programmes for women are made. These programmes restricted mainly in the areas like home economics and ignored women's productive role in agricultural operations. The efforts made so far in this direction appear to be localized and remain largely invisible. Involvement of women in agricultural development process by ICAR has been further strengthened when the concept of Farming Systems approach to research/extension was institutionalized by several ways including assessment and refinement of agricultural technologies through institutionalizing village linkage programme. Still these efforts are very limited to make a substantial dent on the

overall agricultural scenario. From the very beginning Non-Government Organisations (NGOs) have involved women component in their mandate. They too have given more emphasis on issues related to social empowerment of women. They also have given little attention on women's role in agriculture. Therefore, all the major extension systems in India, the participation and benefits accrued to women farmers are minuscule. There is a need to delineate and discuss the reasons attributable to poor access of farm women to extension services in India. The causative factors found were-lack of approach of farm women to extension centres, less communication channel of farm women, less income to purchase farm inputs by farm women, lack of land, inconvenient time and location of meetings, gender biasness by extension staff, lack of gender-appropriate technology and lack of authority to them. The other factors were low farm women literacy, lack of tendency to innovate and make decisions in farming, less women workers in extension services and lack of structural arrangements for women farmers in extension programmes. Indian women despite playing an important role in agricultural production, processing and storage, generally lack the right to property and the control of resources usually pass on from men to men keeping women out of the chain of inheritance. This makes them the largest group of landless labourers. Certain structural changes need to be done in the existing extension machinery of India. Changes in attitude of professionals towards women need to be done. In order to improve the access of farm women, it is prime importance to sensitize the concerned extension workers, extension managers, development administrators and policy makers with the realities of farm women, so that they can be considered as an equally strong force for agricultural and rural development on the same footing as men.

Attitudinal changes of extension workers, extension managers and all other concerned with agricultural development efforts cannot be ruled out in order to bring significant improvement in the women's access to extension system in India. In India, where these functionaries are mostly males, gender sensitization training can be one of the methods to bring out these attitudinal changes. The efforts for improving the women's access to extension services need to be directed towards bringing out some institutional changes in the present machinery of extension in India. Farm women should be provided with greater access to credit facilities and other inputs by simplifying the existing procedures suiting to the educational levels of women folk. Flow of credit, inputs and marketing facilities to farm women can be done through women's cooperatives and mahilla mandals. Different extension agencies are focusing on a limited scale to integrate farm women in mainstream of development efforts. The efforts of these agencies need to be managed more efficiently so as to have a synergistic effect to solve the problem of poor women access to extension services.

The planners should give due recognition to women farmers in designing the development programmes. There is also the need to recruit more extension functionaries in all levels of agricultural extension system. Certain institutional adaptations in the present extension system should be made for a positive step in this direction.

(The writer is Head of KVK Reasi SKUAST-J)

From Nirbhaya to Mounita Debnath to teen age girls all savagery

OMKAR DATTATRAY

The nation had seen and was rocked by the Most infamous case of rape and throwing away of a young female medico from the running vehicle in Delhi which led to serious injuries to the innocent girl who during treatment in a Singapore hospital succumbed to injuries. The gang rape of a young medico by the savages some twelve years before in 2012 December in the national capital Delhi recently the unfortunate case of a doctor trainee at a government hospital in CullKata who was raped and then killed in most brut manner and to now most heinous crime of the sexual assault on the two small girls -of merely and barely of three/four years of age by savages who stooped so low and committed the barbaric and heinous crime at which our heads hang in shame. In all the three cases the savagery of man was in full swing and all the three sexual crimes were savagery in full and these show that brute in man has manifested and shamed the humanity. These sexual crimes have no place in the country called Bharat where on one hand people worship feminine power in the form of Ma Shakti during Navratras twice in a year. Thus on one hand we worship Shakti, but on the other hand we commit serious and heinous crimes against the girls and womenfolk. Thus it seems that we are hypocrites and have no respect towards Shakti, nor towards womenfolk. We boast to be the progeny of Ram, Krishan, Buddha & Rahim, but at the same time feel no remorse in committing rape and murder of the girls and women to satiate their sexual lust and thus humans as brutes indulge in heinous crimes of sexual assault and exploitation unheard in the good olden days. We cannot claim to be modern, cultured and civilized and in fact we are back to stone age because of our dubious conduct. From the unfortunate case of Nirbhaya, nothing has changed. This case took more than eight years to punish those accused of gang rape. Four of the accused had been hanged, one committed suicide and another was set free being juvenile. There is need for swiftness in pronouncing the punishment to those found involved in rape and murder of the girls and women in the country. The government should view rape cum murder cases very seriously. It is unfortunate that nothing has changed since the Nirbhaya case and at that time people protested and demonstrated for giving justice to the innocent victim of gang rape and consequent death because of throwing her from a moving bus later she

died while treatment in a hospital in a foreign land. The country had made some amendments in criminal laws so far as the crime of rape and murder is concerned. Today, the government is armed with the amended law and there is urgent need to enforce and implement the criminal law in this regard swiftly, view and deal such heinous crimes seriously. It is of concern that there is no fear of law and law enforcing agencies in the minds of criminals who commit crimes of rape and murder. In the shameful and savage case of Mounita, there is utmost and right grief, shock, condemnation and the doctors and general public is on roads and the protestors demand no less than capital punishment to those accused in the case. The police action is slow and SC has raised serious questions on the conduct and role of Kolkata police and has also made serious observations on West Bengal government & CM Mamata Banerjee. The shock, outpouring of grief and anger in the Nirbhaya-2 case is similar and more intense to the grief and condemnation some 12 years before over shocking incident of the gang rape of a medical student in Delhi and her subsequent death due to throwing her from the moving vehicle later on during her treatment. In the case of Nirbhaya -2, the medical fraternity across the country is on protest and there is right grief and condemnation of the heinous crime committed on a young medico in the hospital itself raises questions of safety of doctors, nurses and other female staff in the hospitals across the country. Fool proof security and protection should be provided in the hospitals throughout the country so that such barbaric crimes do not happen again. But it is more easier said than done. After continuous strike of 11 days against the rape cum murder of a resident doctor trainee in a hospital of Kolkata on August 9, 2024, and the strike in Delhi AIIMS, and RML Hospital was called off in response to the Supreme Courts appeal to doctors to resume duties in the interest of ailing people. The doctors of PGI hospital at Chandigarh have also called off their strike and the doctors fraternity said that they are giving time to government, CBI and SC to investigate and punish the culprits swiftly.

However Kolkata doctors are continuing their strike against the rape cum murder and had pressed the government to arrest all those involve in rape cum murder case of a trainee female doctor. CBI is investigating the case and will give report to SC and

government after completing the probe. The top Court has said the recent rape and murder of a trainee doctor in West Bengal has 'shocked the conscience' of the nation & criticized the authorities for their handling of the investigations. Chief Justice ordered the setting up of a National Task Force -NTF to recommend safety protocols for healthcare professionals at workplaces. Hardly has the dust and din of the Kolkata incident settled down & nation recovered from shock and grief, an unprecedented and very shocking incident of sexual molestation of two teen age small girls of three/four years of age in a school in Badlapur in Maharashtra took place which has shocked the nation as the crime is most heinous, hair raising and ones shivers go down the spine on hearing such a barbarity on so small girls by the sweeper of the school. People of Badlapur in Thane district are shocked and they were grieving over the most barbaric incident of sexual abuse of two teenage girls in a school in Badlapur village of Maharashtra. Parents, relatives and the general people of Thane district protested in Thane district over the alleged sexual assault of two four year school girls by a cleaning staff member and the delay in police action, bringing Mumbai local train services on the Central Line to a complete halt for 10 hours on Tuesday. As per the complaint, the accused sexually abused the girls in the toilet of the school. The school management has suspended the school principal, a class teacher, and a female attendant over the incident. The accused was arrested on August 17. The unfortunate and shocking incident took place between August 13 and 16 and the parents filed the complaint on August 18. The accused was arrested and a speedy judicial trail should be conducted and capital punishment pronounced to the accused so that justice is ensured to the victims and a sense of fear of law is created among the people indulging in such inhuman crimes against man and God.

It is pertinent to note that many sexual assaults and abuses, exploitation take place in the cities and villages which remain unreported because the victim or their parents do not complain for fear of social stigma. In brief such barbaric incidents should not take place in the country and for that it is all the more necessary to instill fear of law and law enforcing agencies.

(The author is a columnist, social and KP activist).