

FINANCING KISSAN DRONES

The ruling Government has put in place a number of scientific initiatives for the betterment of agriculture, as a number of people of the country are associated with it and earning their livelihood from the same. One such major initiative is Kissan Drones, which are expected to give a major boom to the sector. As informed by the Union Minister of Agriculture and Farmers Welfare, Narendra Singh Tomar in Lok Sabha, various provisions have been made for promotion of Kissan Drones, under the guidelines of Sub-Mission on Agricultural Mechanization (SMAM). Financial assistance @ 100 per cent of the cost of drone up to a maximum of Rs. 10 lakh per drone is provided for purchase of drones for their demonstration by institutes under Indian Council of Agricultural Research, Farm Machinery Training & Testing Institutes, Krishi Vigyan Kendras (KVKs), State Agriculture Universities (SAUs), State and other Central Government Agricultural Institutions/Departments and Public Sector Undertakings (PSUs) of Government of India engaged in agricultural activities. The Farmers Producers Organizations (FPOs) are provided grants up to 75 per cent of the cost of agriculture drone for its demonstrations on the farmers' fields. A contingency expenditure of Rs 6000 per hectare is provided to these implementing agencies that do not want to purchase drones but will hire drones for demonstrations from Custom Hiring Centres (CHCs), Hi-tech Hubs, Drone Manufacturers and Start-Ups. The contingent expenditure to implementing agencies that purchases drones for drone demonstrations is limited to Rs 3000 per hectare. In order to make available drone services to farmers on rental basis, financial assistance @ 40 per cent up to a maximum of Rs 4 lakh are provided for purchase of drones by CHCs under Cooperative Society of Farmers, FPOs and Rural entrepreneurs. Agriculture graduates establishing CHCs are eligible to receive financial assistance @ 50 per cent of the cost of drone up to a maximum of Rs 5 lakh per drone. For purchase of drones on individual ownership basis, the Small and Marginal, Scheduled Caste/Scheduled Tribe, Women and North Eastern State farmers are provided financial assistance @ 50 per cent of the cost up to a maximum of Rs 5 lakh and other farmers @ 40 per cent up to a maximum of Rs 4 lakh. Based on the proposals received so far, the funds amounting to Rs. 129.19 crore have been released towards Kissan Drone promotion which includes Rs. 52.50 crore released to the ICAR for purchase of 300 Kissan Drones and organizing their demonstrations on the farmers' fields in 75000 hectares through 100 KVKs, 75 ICAR institutions and 25 SAUs. It also includes funds released to various State Governments for supply of more than 240 Kissan Drone to farmers on subsidy and establishment of more than 1500 Kissan Drone CHCs to provide drone services to the farmers. ICAR in their demonstration project included four SAUs, two ICAR Institutes and five KVKs of the Gujarat State and a total of 13 Kissan Drones have been sanctioned to them. The State of Gujarat has so far not submitted any proposal towards Kissan Drone subsidy and establishment of Kissan Drone CHCs under SMAM. The use of drone have some distinct advantages such as high field capacity and efficiency, less turnaround time and other field operational delays, wastage reduction of pesticide and fertilizers due to high degree of atomization, water saving due to ultra-low volume spraying technology in comparison to traditional spraying methods, reduction in cost of spraying and fertilizer application in comparison to conventional methods etc. besides reduction of human exposure to hazardous chemicals. Scientific studies are carried out and data supporting the drone application are generated. Pilot studies with different approaches like use of remote sensing technology including satellite data and drone based images especially for crop cutting experiments planning, direct yield estimation at Gram Panchayat level, risk mapping of district and for dispute/area discrepancy resolution etc. have been conducted through Mahalanobis National Crop Forecasting Centre (MNCFC). Standard Operating Procedures (SOPs) which provide concise instructions for effective and safe operations of drones for pesticide and nutrient application have been released. The awareness among farmers is being created through demonstration and capacity building programmes.

■ SHIV KUMAR PADHA

According to Prime Minister Narendra Modi, "Many global banks have become local and the local manufactures global." Be vocal for local is a sequel and Indian equivalent for US president Trumps 'America First.' It is a universal truth that the nations which do not take lesson from history either perish or have to pay heavy price after wars.

India is the country which has been gifted with large deposits of metals, minerals from iron to gold, uranium to platinum. Besides this the bountiful nature has rewarded India with enormous natural wealth in the shape of forests, flora and fauna, long rivers, which, if utilized judiciously and properly, can steer the nation towards self sufficiency and help elevate the economic standard of the poor. Indian major and small scale industries have been catering to the needs of both its citizen and other neighboring countries. The traditional vocations like carpentry, Iron foundary forgery, making agriculture implements, woolen blankets and tweeds, bamboo products, utencil making, shawls, embroidery, which satisfied local needs have not only vanished from India but the youth from these families have divorced the vocation forever. Disappointed over the dependence of the country on the foreign goods, from cell phone to the war planes, our visionary, far sighted and perceptive Prime Minister gave slogan like Make In India, Startup India and now Be Vocal for Local in order to inculcate feeling of self reliance by reducing the dependence on

foreign goods.

Going back to history, the Swadeshi movement was in protest against the decision of Lord Curzon who divided Bengal in 1903 and which was made public in 1905. It called for the boycott of all the British goods and buy Indian products in order to instill a sense of self reliance. The British East India company compelled Indian farmers to grow indigo and cotton and exported it to Britania from where well finished cotton cloth was imported in India which, being cheap, were preferred by the Indians which resulted into the shortage of the raw material and destruction of the Khadi industry in India. The unemployment in the weavers and the producers of cotton and indigo resulted into starvation. The world famous Muslin cloth of Dhaka (Dhaka Ki Malmal) also fell prey to the vicious cycle of British trade. Some nationalist leaders like Bal Ganga Dhar Tilak, Lala Lajpat Rai, Chidambaram Pillai and Aurovindo Ghosh fought against this attitude of the East India Company which Mahatma Gandhi joined later on in 1921 who gave a call to boycott the foreign goods. On the call of Mahatma, people burnt British goods in the bone-fires. No doubt the economy of many developed and super power countries depend upon the import of Indian manufactured goods which prove suitable, cheap and qualitative on their parameters. But the inclination, dependence and tendency of Indian market towards the Chinese goods have been proving fatal for the survival of Indian manufacturers.

Many Indian traders, tempted by the design, affordable cost, profit margin, are preferring Chinese goods blindly unaware of the fact that the material which the Chinese use in the manufacture of goods is of lowest quality as whole of the material used is recyceled whereas the ingredients used in the manufacture of the eatables is extracted from the human waste like human urine collected from different educational institutes and other places. As such the Chinese goods are hygienically dangerous and hazardous for the lives that use them. China, In order to become world's trade hub and biggest exporter in the world, has conquered the world market with the result the local manufacturers of developing countries have closed their industries and are completely relying upon the goods imported from China. China is manufacturing all the goods from an ordinary paper kite to that used in every kitchen, bath room, house hold, sophisticated electronic gadgets, computers used in the medical, defense and space research institutes and IT sector which are always prone to cyber espionage .

Even the ordinary articles like electric lightings, cables switch gears carrying no guarantee are being imported in the country brazenly. We in India know how the innocent children have been losing their lives every year while flying kites with the China made thread Maza.

After Make in India and Start up India our Prime Minister Narendra Modi has called upon the nation to go vocal for Local. The resolve to boost domestic manufacturing is commendable. Prime Minister's recent sales pitch of Vocal

about Local is the Indian equivalent of US President Donald Trump 'America First'. The Prime Minister urged the people of India to believe in and purchase local products in order to strengthen the economy of the country. According to him India's local products have helped the country immensely in tackling the Coronavirus crisis.

Para military (CAPFs) canteens have been directed to sell only Made in India products from June 1 or they can sell those non-local products which are manufactured in India, with Indian raw material grown in Indian farms and where the laborers involved are from India. Like Japan which is known for the electronic gadgets like musical systems LEDs, automobiles etc. India is famous for its hosiery, woolen clothes, fabries, auto mobiles, foot bears of Agra and Kanpur, Cotton cloth from DCM, JCT Phagwara, Diamond Industries of Gujarat, Southern Sarees and the endless products but being the biggest nation needs much to be manufactured in the local sector. While addressing a gathering in Manna village on the Indo China border in Uttarakhand, Pm Modi emphasized upon the tourists to utilize 5 per cent of their travel budget to buy the local products so that the local skill and craftsmanship gets encouraged.

This is the only way we as nation can follow the slogan given by Prime Minister, establish the local trade and give a wide publicity to it which can ensure job to every hand and self reliance for the nation.

(The author is a social activist from Basohli).

Joint Forest Management

■ G L KHAJURIA

A wave of liberalization is sweeping though the forests of Indian subcontinent which were earlier strictly under the control and surveillance of forest department with the passage of time, need was felt to throw them open to the local communities to protect and share the benefits accruing there from to the locals. This was necessitated for the better management of forests. Behind this belated realization, it was deeply though that without willing and active participation of the communities who are over the ages traditionally basic custodian and dependent upon forest for their food, fuel and fodder requirements.

No amount of coercion and draconian laws can save the forests which are increasingly shrinking both in terms of density of crop. The time for changing the entire concept of forest management becomes necessary owing to ever shrinkage of forest cover particularly in mountains and hills where the forest are on higher risk of decimation and denudation due to commercial exploitation, though the fact goes that Supreme Court of India has put a blanket ban on felling of trees, particularly those which are in standing form. And with growing disenchantment among the rural masses turning into violent clashes at many a places. The need to involve local masses in conservation and protection of the dwindling forest cover and other natural resources was ultimately realized. What began in most of states particularly, west Bengal which is predominantly an exceptional example in 1972 which has now been incorporated an official policy. The miraculous turnaround was as a request of community participation in broader spectrum and administrative steadfastness in protecting scarce natural resources. The credit of course, goes to forest legislation of Joint Forest management (JFM), local village and above all forest dependent communities who are unison become the

most respectable partners of the union territory in protecting vulnerable natural resources, thereby averting ecological disaster. With well stocked of forests ripped out for timber and firewood, the forest contractors illegally diverted truck loads to feed the demands for the plains devouring whatever was left starring straightway at catastrophe. The fueling matters were damaging operations in west Bengal Forest Corporation which had enjoyed two decades of legal access to Darjeeling timber. The West Bengal Development Corporation (WBFD) was finally wounded up for back in 1992, returning forest management in Darjeeling and Kurseong Forest Division to the forest directorate. Even the current basic requirement for fuel and fodder are proving too much for long term sustainability of the forests. Around 35000 hectares of well preserved wildlife habitat are endangered two wildlife sanctuaries and two national parks forming the protected area network (PAN) home to a variety of fauna which include black bear, barking deer and endangered Red Panda. Ironically, the open forest which have already depleted, PAN faces the specter of disaster.

By entrusting the well-being of forests to the locals, JFM has been able to draw on a ready source of man power to maintain dwindling forests. In addition, joint patrolling with foresters has helped to a larger extent to discard many misgivings about the department. The union territory of Jammu & Kashmir made a big leap in introducing joint forest management (JFM) where village communities were involved with the formulation of the village development committees. All these enduring efforts, of course, revealed successfully orientation with rich outcome results.

Efforts should be done to energize the department to receive Joint forest management (JFM) to pristine endeavor committee under the umbrella of Joint Forest

management (JFM) on a bigger platform. J&K is beset with lush green vibrant forests which warrant preservation, protection and propagation. Let us be the fore-runner in greening owe wastelands including road ways, railway tracks, canal schools and other institutions and all other barren lands so that our union territory becomes neat clean and green. Promoting preserving/Protecting our forest mean a welcome reception to the tourists.

No denying the fact that J&K is on top slot in almost both regions viz Jammu and Kashmir. It is ironical that Jammu had always been a back bencher. Bhadarwah valley also nomenclaturised as Chotta Kashmir is no way less than Kashmir and even across the Globe. Jammu region is famous for temple tourism owing to existence of sacred spot which do deserve their portion. Black deodar of Chenab valley have their own distinction found nowhere except Germany.

The sacred cave of Shri Mata Vaishno Devi is world renowned where pilgrims over lakhs for the holy Darshan, pay obeisance for blessings. Apart, there are listless pilgrimage spots sprawling over the length and breadth of the union territory which do deserve development promotion, propagation to larger extent. The tourists industry is beyond all ambiguities biggest which make visitors across the globe enchant so much so that the Bollywood stars have shoot many films in the valley of Kashmir, Patnitop and of course in Bhadarwah valley. Prime Minister Narendra Modi had been emphasizing on environmental and tourism potential. This twin aspect warrant to be prioritized so as to promote union territory's tourism apart from opening the employment fronts. This shall go a long way in improving the economy of Jammu & Kashmir, The crown of Mother India.

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ChatGPT in agriculture: Relevance and concerns

■ DR PARVEEN KUMAR

Most of us have heard about a Chatbot. A chatbot is a computer programme designed to stimulate conversation with human users especially over the internet. It is a computer programme that uses artificial intelligence (AI) and Natural Language Processing (NLP) to understand customer questions and automate responses to them stimulating human conversation (either written or spoken). It allows humans to interact with digital devices as if they were communicating with a real person. Now, ChatGPT has emerged as a revolutionary technology and a breakthrough approach in Artificial Intelligence. ChatGPT had more than 1 million users in the first five days after it launched. According to an analysis by Swiss bank UBS; ChatGPT is the fastest-growing app of all time. The analysis estimates that ChatGPT had 100 million active users in January, only two months after its launch. For comparison, it took nine months for TikTok to reach 100 million.

ChatGPT was created by San Francisco-based artificial intelligence company OpenAI. OpenAI Inc. is the non-profit parent company of the for-profit OpenAI LP. OpenAI is famous for its well-known DALL·E, a deep learning model that generates images from text instructions called prompts. The name DALL·E is a blend of Salvador Dali, the famous artist and Pixar's WALL·E movie. ChatGPT derives its name from the family of Generative Pre-Trained Transformer (GPT) language models from which it comes and thus becomes its member. ChatGPT is a large language model (LLM) chatbot developed by OpenAI based on GPT-3.5. It was discovered that increasing the amount of data increased the ability of the language models to do more. Large Language Models are trained with massive amounts of data to accurately predict what word comes next in a sentence. LLMs predict the next word in a series of words in a sentence and the next sentences, a kind of like auto-complete, but at a mind-bending scale. This ability allows them to write paragraphs and entire pages of content. ChatGPT is a revolutionary technology because it is trained to learn what humans mean when they ask a question. Reinforcement Learning with Human Feedback (RLHF) is an additional layer of training that uses human feedback to help ChatGPT learn the ability to follow directions and generate responses that are satisfactory to humans. This gives it a remarkable ability to interact in conversational dialogue form and provide responses that can appear surprisingly human. It's another beauty is its ability to churn data from different sources and produce mostly unique answers that are usually paraphrased to the same question.



ChatGPT in Agriculture: ChatGPT can help quickly find information, assist in learning new things, function as a translation tool, help business houses improve customer service and vice versa. This ability of ChatGPT can be exploited in the agriculture sector for providing various advisory and diagnostic services to the farming community. The ChatGPT text generation model can assist farmers in many ways with daily tasks. It can advise on key aspects of care and management of crops, recommend application of plant protection chemicals, fertilizers and organic manures thereby helping to optimize crop yields. In addition, it has the potential to work out budgetary requirements for establishment of various farming system models, work out the cost benefit ratios for different crops and system, can provide ideas for new prototypes, products or concepts and on various aspects of crop insurance. ChatGPT can replace the use of traditional search engines. Besides serving the needs of farming communities, ChatGPT can assist various input and service provider companies in the agriculture sector. A research was conducted by a team of scientists at the University of California, Berkeley and the University of Southern California by combining Natural Language

Processing (NLP) with an AI-driven chatbot, trained using a GPT-4 language model to create a system designed to reduce agricultural losses. The team tested the system by using it to provide farmers with timely information about weather events, crop diseases, and pest infestations, and evaluated its effectiveness in reducing losses by analyzing the farmers' responses to the chatbot's advice. The results showed that on an average, losses decreased by 5.5 per cent, with a maximum of around 16 per cent.

ChatGPT can also be utilized to analyze large amounts of data from various sources related to weather, market, soil and yield parameters which can help to take informed decisions regarding crop and livestock management. Crops and livestock can be monitored using sensors and cameras and help farmers' detect early signs of disease or stress to allow them to take preventive and anticipatory measures. ChatGPT can be used to automate manual tasks such as planting, harvesting and monitoring crop growth. This ultimately helps farmers' save considerable time and labour costs. By using weather data, ChatGPT can predict when and how much water to apply to crops, thus can be used to optimize irrigation systems. ChatGPT model

can help companies develop new products or improve upon the existing ones. Identification of diverse consumer needs and then coming up with smart innovative solutions is another way in which ChatGPT can prove to be a handy tool for these input and service providers. Besides, it can also help them in devising more effective marketing strategies and campaigns. It can help identify consumer behavior and preferences and offer better and more targeted marketing opportunities. Given the enormous scope of this technology, the Ministry of Electronics and IT is planning to integrate ChatGPT with WhatsApp to help Indian farmers understand and learn about several government schemes. According to a report, ChatGPT powered WhatsApp chatbot will help users by answering their queries sent through voice notes. It will primarily come handy to those Indian farmers who might not be familiar with typing on smart phones. It is also here noteworthy to mention that that Satya Nadella, CEO at Microsoft had also mentioned at the World Economic Forum that Indian farmers would soon be able to utilize a GPT interface to access a government programme using the internet.

ChatGPT and concerns: The potential of ChatGPT is enormous and its possibilities are nearly limitless. ChatGPT is still in its infancy and may need years to be a mature tool for farmers. There are apprehensions regarding its application in agriculture. ChatGPT can provide a solution sourced from millions of repositories and materials available online. Its efficiency thus also depends on the quality of the repository too which is uploaded by humans. Incorrect formation uploaded will prove disastrous. So there must be checks and balances in the uploading process. Extension professionals will thus need to put in more efforts to understand agriculture's dynamic nature before referring the ChatGPT solutions to farmers. The role of extension professionals will therefore involve adding the human dimension to advisories which such technology platforms cannot. ChatGPT also does not provide sources for its responses. One can never know exactly where the chatbot pulled its information from and can't verify its accuracy by visiting the original source. Another major difference is that ChatGPT only has access to information up to 2021, whereas a regular search engine like Google has access to the latest information. So if you ask ChatGPT anything that happened in 2022, it wouldn't be able to give you a response as other search engine would give. ChatGPT's limitations also include its inability to answer questions that are worded in a specific way as it requires rewording to understand the input question. Another limitation reported is regarding the lack of quality in the responses it delivers.