

Make cleanliness a habit

The Swachh Bharat Abhiyan, initiated by the Prime Minister, is indeed a commendable effort to promote cleanliness and hygiene in our country. It emphasizes the importance of cleanliness not just as a government initiative but as a way of life that every citizen should embrace. The success of the Swachh Bharat Abhiyan relies heavily on active participation from citizens. Every individual has a role to play in keeping their surroundings clean and maintaining proper sanitation practices. The campaign seeks to bring about a cultural shift where cleanliness becomes an integral part of our daily lives. It encourages people to take pride in their surroundings and make cleanliness a habit. Cleanliness is not just about aesthetics; it is directly linked to our health and well-being. Proper sanitation practices can prevent the spread of diseases and improve overall public health.

AB-PMJAY SEHAT scheme emerging as boon for public

The AB-PMJAY SEHAT scheme in Jammu and Kashmir has proven to be a tremendous benefit to the public. Since its launch in December 2020, over 5.50 lakh patients have received treatment, amounting to nearly Rs. 1,225 Crores in healthcare expenses covered.

This initiative, under the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana SEHAT (AB PM-JAY SEHAT) scheme, aims to provide Universal Health Coverage to all the residents of Jammu and Kashmir. Launched by the Prime Minister of India on December 26, 2020, it offers an annual health cover of Rs. 5 lakhs per family for secondary and tertiary care hospitalization across both public and private empanelled hospitals in India. Remarkably, Jammu and Kashmir is the only state or UT in India to implement such a comprehensive scheme, ensuring healthcare access for all residents, regardless of their socio-economic status. The UT boasts a total of 235 empanelled hospitals, both public and private, under the scheme. Additionally, national portability enables beneficiaries to receive treatment at nearly 28,000 empanelled hospitals across the country. The Government of Jammu and Kashmir has diligently followed the guidelines of the National Health Authority (NHA), Government of India, for the scheme's implementation. This includes using the Model Tender Document issued by NHA for transparent selection of insurance companies and adopting Health Benefits Packages (2.2 version) for implementation. The IT solutions developed by the National Health Authority are integral to the scheme's operation. Since the launch of AB PM-JAY SEHAT scheme, the Government of J&K has paid Rs. 982.59 Crores in premiums to insurance companies. In return, insurance companies have disbursed a total of Rs. 1,226.68 Crores in claims to empanelled hospitals (Rs. 638.81 Crores to public hospitals and Rs. 587.87 Crores to private hospitals) for the treatment of beneficiaries. A total of around 5.50 lakh patients have availed treatment for various conditions under the scheme which, inter-alia, include 20,940 Cancer patients (amounting to Rs. 171.01 Crores), 19,177 patients with Cardiac ailments (amounting to Rs. 160.87 Crores) and 9,710 patients suffering from Chronic Kidney Diseases (amounting to Rs. 90.57 Crores). In the absence of such a scheme, most of the patients suffering from these Life Consuming and Life Threatening diseases could not have afforded such treatments which required prolonged medical management.

The scheme's insurance model shifts the risk to insurance companies, as evidenced by them paying nearly Rs. 244 Crores beyond the premiums to the empanelled public and private hospitals. This model has not only strengthened the healthcare system within the UT but has also significantly reduced out-of-pocket expenses, preventing catastrophic payments and poverty for families in need of hospitalization. It has also positively impacted the health-seeking behavior and satisfaction of beneficiaries, creating employment opportunities in both government and private hospitals.

For enhanced patient satisfaction, a feedback system using QR codes and a 104 Call Centre has been implemented. Impressively, nearly 99% of patients providing feedback have rated their treatment experience as Excellent or Good.

However, it's worth noting that there have been attempts to discredit the scheme through misinformation. Such allegations are intended to disrupt the services and shall be dealt with strictly.

Transforming Fruit Crops: Unleashing the potential of Artificial Intelligence

■ PROF. PARSHANT BAKSHI & MECHA PATIDAR

In recent years, the integration of cutting-edge technologies has brought remarkable advancements to the world of agriculture. Among these technologies, Artificial Intelligence (AI) has emerged as a game-changer. AI has the potential to revolutionize various sectors, and the fruit crop industry is no exception. With its capacity to analyze massive amounts of data, make precise predictions, and optimize resource utilization, AI is transforming the entire lifecycle of fruit crops, from cultivation and management to harvesting. AI has already been successfully employed in advanced countries such as the United States, Israel, Australia, China, and the United Kingdom. These countries have utilized AI in various aspects of fruit crop production, including spraying, harvesting, pruning, grading, and packing. The implementation of AI technologies has enhanced efficiency and productivity in these operations, leading to improved outcomes for fruit growers.

In the Union Territory of Jammu and Kashmir (J&K), the Holistic Agriculture Development Plan includes a project focused on Sensor-Based Smart Agriculture. This project aims to explore and implement AI-based operations in high-density apple and walnut cultivation. By leveraging AI technologies, the project seeks to optimize resource allocation, enhance productivity, and improve the overall sustainability of fruit crop production in the region.

AI holds immense potential to revolutionize the fruit crop industry. From precision farming and crop monitoring to yield estimation, harvest optimization, and even genetic improvement, AI technologies are reshaping the way fruit crops are cultivated, managed, and harvested. By embracing AI, the fruit crop industry can pave the way for a more sustainable and technologically advanced future, ensuring food security and meeting the challenges of a growing global population. Through this article, I will delve into some of the exciting applications of AI in fruit crop production and how AI can enhance productivity, promote sustainability, and contribute to positive agricultural outcomes. By harnessing the power of AI, fruit growers can make informed decisions based on

data-driven insights, leading to optimized resource management and improved crop yields.

Precision Farming

AI plays a pivotal role in precision farming, enabling growers to make informed decisions based on real-time data. Through the use of sensors, drones, and satellite imagery, AI can collect vast amounts of information on fruit crops quality, soil conditions, and weather patterns. This data is then analyzed to provide insights on optimal irrigation schedules, fertilization plans, and pest management strategies. By precisely targeting resources and interventions, orchardists can minimize waste, reduce costs, and maximize crop yield.

Crop Monitoring and Disease Detection

Early detection and timely management of diseases and pests are crucial for maintaining healthy fruit crops. AI-powered systems can continuously monitor crops using computer vision techniques and deep learning algorithms. By analyzing images and videos captured by cameras or drones, AI algorithms can quickly identify signs of disease, pest infestations, or nutrient deficiencies. This enables growers to take prompt action, preventing the spread of diseases and minimizing crop losses. Yield Estimation and Harvesting Accurate yield estimation is essential for effective crop planning and marketing decisions. AI algorithms can process data from various sources, such as historical yield data, weather conditions, and crop characteristics, to predict fruit yield with high precision. This information empowers farmers to optimize harvest schedules, plan logistics, and ensure efficient utilization of labor and resources. Additionally, AI-powered robots and robotic arms equipped with computer vision technology can selectively harvest ripe fruits, reducing labor costs and minimizing post-harvest losses.

Crop Breeding and Genetic Improvement

AI is revolutionizing the breeding of fruit crop by expediting the development of new varieties with improved traits. Machine learning algorithms can analyze extensive genomic data, identifying patterns and associations between genes and desirable traits. This enables researchers to predict the performance of different

genetic combinations, accelerating the breeding process. AI can also optimize the selection of parent plants, leading to the development of fruit varieties with enhanced yield, disease resistance, flavor, and nutritional content.

Pollination of fruit plants

AI-powered drones equipped with advanced sensors and cameras have the potential to replicate the pollination process performed by insects. By leveraging computer vision and machine learning algorithms, these drones can identify flowers, precisely deposit pollen, and monitor pollination activities. Autonomous pollination drones can navigate orchards and deliver pollen to flowers, providing a reliable and efficient alternative to natural pollinators. This technology not only ensures pollination in areas with limited insect populations but also allows for precise control and optimization of the pollination process.

Climate Change Adaptation

As climate change poses challenges to agriculture, AI offers valuable tools for adaptation. By analyzing historical climate data and crop performance, AI algorithms can identify crop varieties that are better suited to changing environmental conditions. This helps farmers to make informed decisions on crop selection, ensuring resilience and productivity in the face of climate uncertainties.

The integration of AI into fruit crop production is ushering in a new era of precision, efficiency, and sustainability. From precision farming and crop monitoring to yield estimation, harvest optimization, and genetic improvement, AI offers unprecedented opportunities for fruit growers to enhance productivity, reduce environmental impacts, and mitigate risks. By leveraging the power of AI, the fruit industry can embrace data-driven decision-making, optimize resource utilization, and meet the challenges of feeding a growing global population. As AI continues to advance, its potential to transform fruit crop production and improve agricultural outcomes will only continue to expand, paving the way for a more sustainable and technologically advanced future.

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Upskilling in India: Bridging the Past, Harnessing the Future

■ RAHUL MAHADESHWAR

India, a land of diverse cultures and rich heritage, has always thrived on its ability to adapt and innovate. As the world embraces the digital era and the rapid evolution of technology, upskilling has emerged as a crucial endeavour to ensure that India's workforce remains competitive on the global stage. Through a blend of historical insights and a focus on emerging technologies, we explore the journey of upskilling in India, shedding light on the significance of upskilling in the Automotive sector and its pivotal role in shaping the nation's future workforce.

Throughout history, India has demonstrated a remarkable ability to adapt to changing circumstances. The country's ancient educational system, known as the Gurukul system, epitomized personalized learning and knowledge exchange. This historical foundation, rooted in fostering individual talents and skills, has left an indelible mark on the modern concept of upskilling. Fast forward to the colonial era, and India was introduced to industrialization, sparking the need for a skilled workforce in sectors such as manufacturing. This period marked the beginning of formal vocational training institutes, shaping the future of upskilling. Today, with the advent of artificial intelligence (AI), machine learning, and automation, upskilling remains imperative to maintain a competitive edge in the global market.

As the world hurtles towards a digital future, the emergence of "Industry 4.0" or the fourth Industrial Revolution characterized by the integration of digital technolo-

gies, automation, and data exchange in various industries, including manufacturing emerging technologies are at the forefront of driving growth and innovation in the automotive Industry. Smart Manufacturing and Automation, IoT and Connectivity, Data Analytics and Predictive Maintenance, Additive Manufacturing (3D Printing), Artificial Intelligence (AI) and Machine Learning, Supply Chain Optimization, Electric and Autonomous Vehicles, Customer Experience and Personalization, Environmental Sustainability are reshaping industries and demanding a new skillset. Upskilling in these areas has become essential for the workforce to remain relevant and adaptable. The integration of Industry 4.0 technologies in the automobile industry is leading to increased efficiency, safety, and innovation, while also presenting new challenges related to cybersecurity, data privacy, and workforce skills.

The global automotive landscape is undergoing a profound shift, driven by emerging technologies, autonomous driving, connectivity, and advanced manufacturing processes. According to a report by McKinsey, by 2030, the penetration of EVs could range from 10% to 50% of new vehicle sales, depending on various factors. These technological advancements demand a workforce that possesses the knowledge and skills to navigate this evolving landscape. Upskilling and reskilling is critical to ensure that the workforce remains competitive, versatile, and capable of leveraging new opportunities that arise.

In the context of India, upskilling is not

only a means to address the sector's technical demands but also a catalyst for economic growth. The automobile sector contributes significantly to India's GDP, employment, and export earnings. As reported by the Society of Indian Automobile Manufacturers (SIAM), the Indian automobile industry contributes around 7.1% to the country's GDP and employs over 32 million people directly and indirectly. By investing in upskilling initiatives, the industry can create a pool of skilled professionals who can drive innovation, enhance productivity, and contribute to the country's economic prosperity.

Schemes such as National Apprenticeship Promotion Scheme (NAPS), Pradhan Mantri Kaushal Vikas Yojana (PMKVY), Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY), Pradhan Mantri Yuva Udyamita Vikas Abhiyan (PM-YUVA) etc are initiative of the Government of India aimed at promoting apprenticeship training and skill development among the country's youth to address the challenges of skill shortages and the need for industry-relevant skills. However, just the creation and promotions of schemes will not suffice to meet the ever growing demand for skilled workforce. A cross function of collaborations between the Government, Industry and the Automotive sector will be necessary to make these schemes beneficial and impactful. The Automotive Industry is a valuable support system for businesses both in the upstream and down stream value chain. Every unit (Vehicle) produced in the industry creates a forward and backward employment chain in various industries and associate industries.

ties and associate industries.

Upstream Industries such as Steel, aluminium, fuel, software, electronics, plastic, rubber etc are directly employed in the manufacturing of vehicle and its components, direct sales and services. The manufacture of vehicles in turn gives rise to industries such as finance and Insurance, used car markets, Fuel supply, warehouse, Transportation and logistics etc.

It is estimated that by the year 2026 there will be 54 million jobs in Industry 4.0 automation and new technology vehicle industry and will be in direct and indirect jobs. With the movement of trends towards the involvement of technology and the towards new concepts such as electric vehicle, the number of unskilled jobs is slated to reduce drastically. Automation and Industry 4.0 require a new skillset which will need to become the vision of the skilling ecosystem. The future will see many current skills becoming obsolete which will either cause the endangering of jobs or the upskilling of current skills to new evolved job requirements.

As India's workforce navigates the ever-evolving landscape of skills and knowledge, the importance of upskilling cannot be overstated. The nation's historical roots in personalized learning and adaptation are now complemented by cutting-edge technologies that demand new skills. Industry-driven upskilling initiatives is the only way to shape the future of a nation's workforce.

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Chapanoo goes for Bamboo Farming

■ DR. BANARSI LAL

Reasi is a hilly district of Jammu and Kashmir which is located around 80 km away from Jammu and is at 1528 meter above mean sea level. As per 2011 Census, the population of this district is 3, 14,714. It was carved from Udhampur district on 1st April, 2007.

This district is surrounded by Udhampur, Rajouri, Jammu, Ramban and Shopian districts. This district of Jammu and Kashmir is very famous because it is an abode of Shri Mata Vaishno Devi Shrine and millions of devotees visit this holy shrine every year.

The Chenab River passes through this district which is another centre of attraction in the district. Reasi district has an immense scope in bamboo cultivation and there are certain areas in Reasi district where bamboo is grown commercially. Most of the farmers of Reasi district are small and marginal and crops are mostly cultivated under rain fed (about 94%) conditions. Major crops grown in this district are maize, wheat, paddy, mash and potato. Farmers of this district are having very limited resources and majority of them have small size of land holding. The yield of the crops is also low as compared to the national yields. The adoption percentage of modern agricultural technologies is slow. Boars and monkeys menace is another big problem for the farmers. They damage the crops causing a huge loss to the farmers of the district. Agroforestry has an immense potential in the district as large part of the district comes under forests. If grown scientifically, bamboo can play the pivotal role in enhancing the income and employment among the farmers of the district.

Bamboo is an important plant gifted by nature in tropical and subtropical areas. It is also called as wonder plant, green gold, emperor of all grasses, wood of the poor etc. It is used by the people in their every-day utilities. It is closely interwoven with the

life of the people in several ways. It can be used as a food, fodder, construction material, paper, mats, musical instruments etc. Bamboo has multiple economical, ecological and social values. It has manifold uses from cradle to coffin.

It has many uses as a substitute for fast depleting wood and as an alternative to more expensive materials. It can be used in paper industry, to make small footbridges, water pumps, irrigation pipes etc. In rural areas it can be used as fodder, in making brooms, food, buckets etc. Nutrient analysis of edible bamboos indicated that it contains 77% to 84% moisture, 4% to 7% protein, 5% carbohydrates, 12-13 mg/100g vitamin C and Na, K, Ca, Mg and P as minerals. Bamboo has the potential for checking soil erosion, fast vegetative growth cover to deformed areas and road embankment stabilization. Bamboo tensile strength is 28000 per square inch versus 23000 for steel.

It can be used for making pillars, roofs, ceiling, walls etc. It can be used to make medicines to treat asthma, cough and fever etc. It is also used to make certain structures in earthquake prone areas, in music and arts. Bamboo cultivation has an immense potential in J&K. Its cultivation and processing can strengthen the economy of J&K and some new employment and income avenues can be created especially for the rural youths in the region. There is need to popularize bamboo cultivation particularly in the wastelands of J&K. Bamboo production is a highly commercial industry and its cultivation reduces the soil erosion.

Chapanoo village is about 40 km away from world famous religious place Katra in Reasi district of Jammu and Kashmir. The village is about 10 km. away from Krishni Vigyan Kendra (KVK), Reasi and farmers of this village regularly seek technical guidelines from KVK, Reasi. This village is situated in the remote area of Reasi district

and is lacking the road and communication connectivity.

There are about 350 families in the village. The major occupation of the people is agriculture and the village is known for the commercial cultivation of bamboo. Most of the farmers of the village do the commercial cultivation of bamboo. There are three Govt. primary schools, two Angadwadi centres and one Community Hall in the village. The village is having around 250 hectares of land. There is no source of irrigation in the village and the village is 100% rain fed. Monkey menace is also an emerging problem in the village.

There are about 250 progressive bamboo growers in the village who are producing the bamboo at a commercial level. The village is known for quality bamboo. They have made furnaces in the village where the bamboos are moulded according to their use. The bamboos of this village are very strong and are used for the building purpose, baskets, stairs, nets, for flags etc. The farmers' sale their produce in local market, Jammu and even in Kashmir province at the rate of Rs.100-120/ bamboo.

Generally the farmers of this village fetch more money by selling their bamboos but during COVID-19 pandemic their market was influenced. Farmers also grow maize, wheat and few local varieties of vegetables as their forefathers were doing. Monkeys and wild boars are the great threats in their fields. Most of the agricultural produce is consumed by their families with very little surplus to sell. So bamboo is the main livelihood source of the farmers of this village. The technical guidelines on scientific bamboo cultivation are provided by the KVK, Reasi. With the generation of extra income, the farmers developed confidence to mitigate their basic problems. A self-reliance and entrepreneurial spirit has been developed among the farmers of this

village.

Chapanoo farmers' success in commercial bamboo cultivation is inspiring the other farmers of the area and they are also shifting towards the commercial bamboo for better economic returns. Gradually many farmers of the area are becoming interested in commercial bamboo cultivation. Bamboo cultivation helped to overcome the problem of monkeys menace in the village as bamboo crop is not damaged by the monkeys. According to a local farmers, Sh. Payar Hussain and Sh. Mohd. Salim our village is known for bamboo production and quality bamboo is being produced by our village farmers.

Special training programmes on value addition in bamboo were also conducted for the inhabitants of the village. Many women Self Help Groups (SHGs) and rural youths took part in these training programmes. District Administration, Reasi, KVK, Reasi, Dept. of Handicrafts and JKRLM are making strenuous efforts to make this innovative venture as an enterprise for the farmers of the district. Some youths of the village have started bamboo processing in the village which is creating income and employment among them in the village. They are making different types of bamboo products and selling them in local market and even in Jammu.

They also demonstrate their products in the Kisan Melas and other events organised by the different organisations. By observing the successful results of bamboo farmers many new farmers are showing keen interest on the capacity building for bamboo processing. According to the bamboo grower, Sh. Mohd. Salim of the village, "We commercially grow bamboo but if some industries on bamboos processing are made in the village then whole scenario of the area can be changed. New avenues

for more income and employment can be generated in the area."

Many farmers grow bamboos in and around their farmlands to increase their farm income. The development of artisan skills for handicrafts and wider utility of bamboo can provide more employment opportunities and better income distribution for the people of this village.

There is a dire need to aware the bamboo growers about the latest information on introduction, phenology, reproductive biology, propagation, exchange of germplasm, conservation status etc. Value addition in bamboo can open up new avenues of employment in the area. There is also a need for the introduction of other species of bamboo of ethno biological significance.

It has been observed that most of the bamboo growers are lacking up-to-date information on ecological and growth parameters, morphological variability's, conservation value, methods for multiplication etc. GIS based information system can be developed for the protected areas. Bamboo processing units can raise the socioeconomic status of the farmers of this area. Ethno biological approach can be adopted towards the cultivation, preservation of rare and threatened species of bamboo in this village. There is need of systematic research studies, range of distribution, flowering periodicity, ethno biological utilization, phenology, floristic compositions, introduction in production forests and homelands of rural areas. Inter-institutional support both at regional and inter-regional levels and interaction may help in developing, improving and managing the bamboo cultivation in this village.

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