

AGRI STACK DPI

The Agri Stack Digital Public Infrastructure (DPI) is a transformative initiative aimed at enhancing the agricultural sector in India through the use of technology and digital tools. It seeks to create a robust, comprehensive digital ecosystem for farmers, stakeholders, and policymakers, facilitating the seamless exchange of information, services, and resources across various levels of the agriculture value chain.

At its core, Agri Stack DPI is designed to provide a unified digital platform for accessing agricultural data, services, and tools. The initiative is part of India's broader vision to promote "Digital India" and to foster growth in the agricultural sector through technology-driven solutions. By harnessing the power of digital infrastructure, Agri Stack aims to improve productivity, reduce inefficiencies, and increase transparency within the agricultural ecosystem.

One of the most crucial aspects of Agri Stack DPI is the creation of a unique digital identity for farmers. This identity, linked with a farmer's Aadhaar (unique identification number), allows for the centralized collection and storage of data related to their land holdings, crop cycles, farming practices, and more. The digitization of this information ensures that farmers can access services, subsidies, and benefits directly, minimizing the chances of corruption or misallocation.

Agri Stack offers various digital platforms designed specifically for farmers. These include portals and mobile applications that provide weather forecasts, market prices, crop advisory, pest and disease management tools, and real-time access to financial and insurance services. These platforms aim to empower farmers with the knowledge and tools they need to make informed decisions, optimize crop yields, and mitigate risks associated with agriculture.

The digital infrastructure built under Agri Stack also seeks to improve the efficiency of agricultural supply chains. By providing real-time data about production, inventory, and demand, Agri Stack can help streamline logistics, reduce wastage, and enable more effective distribution of agricultural produce. This integration helps in connecting farmers directly with buyers, thus ensuring fair prices and minimizing intermediaries.

Smoking cessation and quality of Life

MOHAMMAD HANIEF



Smoking affects everything from the appearance of your skin and nails to how your tissues, organs and even your DNA work. The effects of smoking on your body start the moment you light up a cigarette. Thousands of chemicals released from burning tobacco start their damaging journey before you've even taken a puff.

The heat from burning the cigarette releases nicotine and creates tar (tobacco residue). As you bring the cigarette to your lips, the tar stains your nails. The smoke dries out and inflames your skin, deepening wrinkles. Inhaling smoke through your nose damages nerve endings. Over time, this reduces your sense of smell.

When you take a puff from the cigarette, it goes through a filter. This mostly keeps you from breathing in large particles, but tar, nicotine and other chemicals still get through. The tar stains your teeth and coats your gums and tongue. It damages your tooth enamel, puts you at risk for tooth decay and gum disease, and reduces your ability to taste foods you love.

Your liver processes nicotine and you pee it out within a few hours of smoking a cigarette. Your body misses the buzz and craves more, encouraging you to have another one. If you don't, you experience symptoms of withdraw-

al, like anxiety, depression, restlessness, anger and insomnia. Your body will develop a tolerance to nicotine and eventually need more and more to make you feel good, leading to nicotine dependence.

Jammu and Kashmir Union Territory has been identified as having the 6th highest prevalence of tobacco use in the country, with over 20 percent of the population engaging in tobacco consumption, according to officials.

The prevalence of smoking tobacco in the region stands at 20.8%, ranking it sixth in the country, following Manipur, Arunachal Pradesh, Tripura, Meghalaya, and Mizoram while the relevance of smokeless tobacco in Jammu and Kashmir is the lowest in the country at 4.3%, just after Himachal Pradesh.

According to the Global Adult Tobacco Survey (GATS) 2 data, 35.2% of men, 5.1% of women, and 20.8% of all adults in Jammu and Kashmir smoke tobacco. It adds that 6.8% of men, 1.5% of women, and 4.3% of all adults currently use smokeless tobacco. Overall, 39.7% of men, 6.2% of women, and 23.7% of all adults either smoke tobacco or use smokeless tobacco.

The government has implemented numerous measures to reduce tobacco consumption. Over the past four years, thousands of challans have been issued and substantial fines collected from violators for smoking in public places in the Kashmir division. These efforts have resulted in hundreds of people quitting smoking, with thousands receiving counselling and pharmacotherapy sessions.

Various awareness programmes and initiatives have already been launched in Jammu and Kashmir to educate the public about the hazards of tobacco use, and officials have been instructed to carry out regular enforcement drives for the implementation of COTPA-2003.

Official data reveals that smokers and tobacco users are 2.5 times more likely to develop tuberculosis (TB) as tobacco use raises the risk of TB, increases recurrence, and impairs treatment.

The government of Jammu and Kashmir has already imposed a complete ban on the sale of loose cigarettes, loose bidis, and loose tobacco. All educational institutions and tourist destinations have been declared tobacco-free zones.

The available media reports reveals that among both males and females, the prevalence of cigarette smoking is higher in urban areas but the prevalence of all other smoking products is higher in rural areas. The prevalence of each of the smokeless tobacco product is higher in rural than urban areas, however, gutkha is almost equally prevalent in both urban and rural areas.

On an average a daily cigarette smoker in India smokes 6.1 cigarette sticks per day, and a daily bidi smoker smokes 11.5 bidi sticks per day. One-fourth of daily cigarette smokers smoke more than 10 cigarettes per day, and more than half of the daily bidi smokers smoke more than 10 bidis per day.

Tobacco use is a major risk factor for many chronic diseases, including cancer, lung disease, cardiovascular disease and stroke. It is

one of the major causes of death and disease in India and accounts for nearly 1.35 million deaths every year. India is also the second largest consumer and producer of tobacco.

Tobacco is recognised as the leading cause of preventable deaths worldwide, killing over seven million people globally and more than one million in India annually. Lung cancer has emerged as the second most common cancer, and in recent decades, Kashmir has seen a rise in cases of lung and breast cancers.

Hospital-based data from the Kashmir valley reveals a higher incidence of lung cancer among males, directly correlated to the duration and frequency of smoking. While quitting smoking reduces the risk of developing cancer, the risk does not disappear entirely.

Half of the current smokers believed they could quit if they wanted to, and around 40 percent had quit smoking in the past year, citing various reasons for quitting as it is crucial to address tobacco use among adolescents and enhance awareness of its dangers, given the increasing prevalence and widespread exposure to environmental tobacco smoke.

There are many ways through which one can quit smoking. The first one is preparing for the day when you will quit. It is not easy to quit a habit abruptly, so set a date to give yourself time to prepare mentally.

Thus, if anyone is a slave to cigarettes, it is essential for them to understand that it is never too late to stop smoking. With the help and a good action plan, anyone can quit it for good. Moreover, the benefits will be evident within a few days of quitting.

WHY BROCCOLI IS KNOWN AS SUPERFOOD?

DR SONIA VERMA

Broccoli, scientifically known as Brassica oleracea var italica, belongs to the cruciferous family of vegetables, which also includes kale, cauliflower, and Brussels sprouts. This green vegetable is characterized by its tree-like structure and clustered florets, making it a visually appealing addition to various dishes. Originating in the Mediterranean region, broccoli has gained immense popularity worldwide, not only for its taste but also for its remarkable health benefits. Nutritionally, broccoli is a powerhouse. A single cup of cooked broccoli provides an abundance of essential vitamins and minerals, including vitamin C, vitamin K, folate, and potassium. It is also rich in dietary fiber, which aids in digestion and promotes a healthy gut. In addition to these nutrients, broccoli contains a variety of phytonutrients and antioxidants, such as sulforaphane, which has been studied for its potential anti-cancer properties.

Often referred to as a 'superfood,' broccoli earns this title due to its dense nutrient profile and the myriad of health benefits it offers. Regular consumption of broccoli has been linked to improved heart health, enhanced immune function, and reduced inflammation. Its high antioxidant content helps combat oxidative stress, which can lead to chronic diseases. Furthermore, the fiber in broccoli contributes to weight management by promoting satiety. Broccoli's versatility in the kitchen has contributed to its popularity across various cuisines. Whether steamed, stir-fried, roasted, or blended into smoothies, it can be adapted to suit a wide range of culinary preferences. In Italian cuisine, it is often featured in pasta dishes, while in Asian cooking, it commonly appears in stir-fries. Its mild flavor and vibrant color make it a favorite ingredient, easily complementing numerous recipes.

Nutritional Composition of Broccoli
 Broccoli is not only a delicious vegetable but also a nutritional powerhouse. Its rich composition includes a variety of essential vitamins, minerals, fiber, and antioxidants, making it a key player in a healthy diet. Below is a detailed analysis of the nutrients found in broccoli:

Vitamins
 ▶ **Vitamin C:** Crucial for immune function and skin health, one cup of cooked broccoli provides about 100% of the recommended daily intake.
 ▶ **Vitamin K:** Important for blood clotting and bone health, broccoli is an excellent source, offering over 100% of the daily requirement in just one cup.

▶ **Vitamin A:** Essential for vision and immune function, broccoli contains beta-carotene, which the body converts to vitamin A.

Minerals
 ▶ **Calcium:** Vital for bone health, broccoli contains around 43 mg of calcium per cup, contributing to daily calcium needs.
 ▶ **Iron:** Important for oxygen transport in the blood, broccoli provides about 1 mg of iron per cup, which is beneficial for overall energy levels.

Fiber
 ▶ Broccoli is high in dietary fiber, with about 5 grams per cup. This helps promote digestive health, aids in weight management, and can improve heart health by lowering cholesterol levels.

Antioxidants
 ▶ **Sulforaphane:** This powerful compound has been studied for its anti-cancer properties and is abundant in broccoli.
 ▶ **Quercetin:** An antioxidant that may help reduce inflammation and support heart health.

In summary, the nutritional profile of broccoli highlights its role as a superfood, packed with essential nutrients that support overall health and well-being. Incorporating broccoli into your diet can help meet nutrient needs while providing



numerous health benefits.

Health Benefits of Broccoli
 Broccoli is more than just a nutritious vegetable; it has been extensively studied for its health benefits, particularly in relation to cancer prevention, heart health, digestive health, and its anti-inflammatory properties.

Cancer Prevention
 Numerous studies have indicated that the compounds found in broccoli, notably sulforaphane, may play a significant role in cancer prevention. A study published in the journal Cancer Prevention Research found that sulforaphane can inhibit the growth of cancer cells and may help detoxify harmful substances in the body. This compound is believed to activate certain enzymes that protect against cancer, particularly in the breast, prostate, and colon (Zhang et al., 2016).

Heart Health
 Broccoli's high content of antioxidants and fiber contributes to cardiovascular health. According to research published in the American Journal of Clinical Nutrition, a diet rich in cruciferous vegetables, including broccoli, is linked to a lower risk of heart disease. The antioxidants in broccoli help reduce oxidative stress, while its soluble fiber helps lower cholesterol levels, promoting better heart function (Boeing et al., 2012).

Digestive Health
 The dietary fiber in broccoli supports digestive health by promoting regular bowel movements and preventing constipation. A study in the Journal of Nutrition found that high-fiber diets can improve gut health and reduce the risk of gastrointestinal disorders. Additionally, broccoli contains prebiotics, which nourish beneficial gut bacteria, further enhancing digestive function (Slavin, 2013).

Anti-Inflammatory Properties
 Chronic inflammation is linked to various health issues, including heart disease and diabetes. Broccoli contains several bioactive compounds, such as quercetin and kaempferol, which possess anti-inflammatory properties. A study published in Nature Communications highlighted that these compounds can help modulate the immune response and reduce inflammation in the body (González-Granillo et al., 2019). Incorporating broccoli into a balanced diet can provide significant health benefits, making it a valuable addition to any meal plan.

Broccoli and Weight Management
 Broccoli is not only a nutritional superstar but also a valuable ally in weight management. With its remarkably low-calorie count and high fiber content, it can be a key component of any diet aimed at maintaining or losing weight. A single cup of cooked broccoli contains roughly 55 calories, making it an ideal food for those looking to create a calorie deficit without sacrificing essential nutrients. The high fiber content in broccoli plays a crucial role in promoting feelings of fullness and satiety. Fiber slows down digestion and

helps regulate blood sugar levels, preventing the spikes that often lead to cravings. By incorporating broccoli into meals, individuals can enjoy satisfying portions without the added calories, making it easier to stick to a weight management plan. For those looking to include broccoli in their diet, there are numerous delicious meal ideas that can help achieve weight management goals. A simple yet nutritious option is a broccoli salad, combining raw broccoli florets with cherry tomatoes, red onions, and a light vinaigrette. This refreshing dish not only provides crunch but also packs a punch of vitamins and minerals. Another great way to incorporate broccoli is through stir-fries. By adding broccoli to a mix of lean protein such as chicken or tofu and colorful vegetables like bell peppers and snap peas, you create a balanced meal that is both satisfying and nutritious. Additionally, roasting broccoli with a drizzle of olive oil and seasoning can enhance its natural flavors, making it a delicious side dish. For those looking for a quick snack, steamed broccoli can be paired with hummus or a yogurt-based dip. This combination provides a healthy, low-calorie snack that keeps hunger at bay.

In summary, broccoli's low-calorie density and high fiber content make it an excellent choice for weight management. By creatively incorporating it into meals and snacks, individuals can enjoy its numerous health benefits while effectively managing their weight.

Cultivation and Sustainability of Broccoli

The cultivation of broccoli involves a series of well-planned steps, starting from seed selection to harvesting, and is complemented by sustainable agricultural practices that mitigate environmental impacts.

Planting
 Broccoli is typically grown in cool-season regions, thriving in temperatures between 60°F to 70°F (15°C to 21°C). The planting process begins with selecting high-quality seeds or seedlings. Farmers often choose hybrid varieties for their disease resistance and higher yields. Seeds can be sown directly in well-prepared soil or started indoors and later transplanted. The soil should be rich in organic matter, well-drained, and slightly acidic to neutral (pH 6.0 to 7.0). Adequate spacing between plants is crucial to ensure good air circulation and reduce the risk of fungal diseases.

Harvesting
 Harvesting broccoli is a critical phase that requires precision. The ideal time to harvest is when the florets are still tight and before they begin to flower, which usually occurs around 70 to 100 days after planting. Farmers can carefully cut the central head of the broccoli while leaving the smaller side shoots to continue growing, allowing for multiple harvests from one plant. Proper post-harvest handling is essential to maintain freshness and quality, involving quick cooling and storage at

low temperatures.

Sustainability Practices

Sustainable broccoli farming emphasizes practices that protect the environment while ensuring economic viability. Crop rotation is one such method, helping to prevent soil depletion and reduce pest and disease cycles. Integrated Pest Management (IPM) is also crucial, utilizing natural predators and organic pesticides to control pests without harming beneficial insects or the ecosystem. Innovative techniques, such as drip irrigation and mulching, conserve water and suppress weeds, respectively, further promoting sustainability. Cover cropping during the off-season can improve soil health and prevent erosion. Additionally, organic farming practices that avoid synthetic fertilizers and pesticides not only enhance soil biodiversity but also produce healthier crops.

Environmental Impact

While broccoli cultivation can contribute positively to sustainable agriculture, it can also have environmental impacts if not managed properly. Excessive use of water, fertilizers, and pesticides can lead to soil and water pollution. Therefore, adopting sustainable practices is essential to minimize these effects, ensuring that broccoli farming can continue to thrive without compromising the environment. Through responsible cultivation methods and innovative sustainability practices, broccoli can be grown efficiently, contributing to food security while preserving ecological balance.

Potential Risks and Considerations

While broccoli is widely celebrated for its health benefits and nutritional value, there are potential risks and considerations associated with its consumption that should not be overlooked. One notable issue is the possibility of allergies. Though rare, some individuals may exhibit allergic reactions to broccoli or other cruciferous vegetables. Symptoms can range from mild reactions, such as itching or hives, to more severe manifestations, including gastrointestinal distress or anaphylaxis. For those who suspect they may have an allergy, it is advisable to consult a healthcare provider for appropriate testing and guidance. Another important consideration is the interaction of broccoli with certain medications. Broccoli contains high amounts of vitamin K, which plays a crucial role in blood clotting. Individuals taking anticoagulant medications, such as warfarin, should be cautious about their broccoli intake, as sudden changes in vitamin K consumption can affect the efficacy of these medications. It is essential for patients on such medications to maintain a consistent diet and discuss any significant dietary changes with their healthcare provider. Additionally, some individuals may experience digestive discomfort when consuming large quantities of broccoli, particularly if they are not accustomed to a high-fiber diet. Symptoms can include bloating, gas, or abdominal pain. Gradually incorporating broccoli into the diet can help mitigate these effects, allowing the digestive system to adapt over time. For pregnant or breastfeeding women, it is prudent to consult a healthcare provider regarding dietary changes, including the increased consumption of broccoli. While broccoli is nutritious, individual dietary needs can vary significantly during pregnancy and lactation. In summary, while broccoli is a valuable addition to a healthy diet, awareness of potential allergies, medication interactions, and digestive sensitivities is crucial. Consulting a healthcare provider when making significant dietary changes can help ensure that broccoli consumption is safe and beneficial for individual health circumstances.

(The writer is Director/CEO Synergetic Green Warriors Foundation)

MAHAKUMBH 2025: A SANGAM OF CULTURE & TECHNOLOGY

Gently flows the mighty Ganga, embracing the ancient and the new, invigorating life as we know it, and nurturing civilizations revering its every drop. Celebrated since perpetuity all along its journey, every 12 years the mighty river receives millions that flock to it seeking its blessings. For vast multitudes, the Kumbh Mela, observed at the confluence of the Ganga, Yamuna and the invisible Saraswati at Prayag, has remained a symbolic link with ancestors who generations ago came to the very spot in reverence, and went back with memories that lasted a lifetime. The Maha Kumbh of 2025, currently underway at Prayag, is anticipated to see a footfall of nearly 300million pilgrims during the 45 days of the Mela, making it the largest religious gathering on the planet. It has taken a mammoth effort, by all the stakeholders, to ensure that this vast multitude of humanity reaches the holy Sangam and partakes its blessings with ease.

For Mahakumbh 2025, the Indian Railways is not just facilitating travel but making the entire experience a remarkable blend of tradition and technology. It has taken an investment of Rs 5,000 crore over the past three years to develop Kumbh-related infrastructure projects, including a new river bridge. Not to be outdone, the digital initiatives taken to facilitate travel for the citizens at large, are taking the lead in transforming rail travel into a pleasurable experience.

Pilgrimage Goes Digital

The Kumbh Rail Seva website launched by the Indian Railways, is a one-stop digital platform for real-time updates on train schedules, ticket availability and station amenities. Paired with a multilingual mobile app, it ensures no devotee is left behind, regardless of linguistic or technical barriers. Pilgrims can plan routes, book tickets, and access essential services at their fingertips - a critical step for managing the influx of millions.

To enhance accessibility and inclusivity, announcements are being made in 12 major Indian languages, catering to the linguistic diversity of the country. Even the facilitation booklet is available in 22 languages. The toll free number also provides information in Hindi, English and regional languages, ensuring seamless communication regardless of language, region or country.

The integrated digital Railway Display Network at nearly 2,000 stations offers real-time updates for passengers. By streamlining communication, these digital screens ensure that pilgrims experience minimal inconvenience during their journey. Moreover, Indian Railways has embraced social media platforms like Twitter, Facebook, and Instagram, keeping travellers informed with timely updates and announcements.

Complementing these efforts are touch-screen kiosks strategically installed at major terminals. These kiosks function as both ticket counters and information hubs, enabling efficient navigation and reducing long queues. Additionally, the integration of barcode-based UTS (Unreserved Ticketing System) at stations, along with QR codes printed on the specially designed green jackets of Railway personnel, is saving long waiting time at ticket counters and at the same time reducing paper usage.

War Room: Safeguarding the Mahakumbh Experience

The nerve centre of this massive logistical operation is the 24x7 Mahakumbh War Room in Prayagraj. Armed with cutting-edge monitoring systems, the War Room oversees real time train operations, public traffic, and crowd movement in constant coordination with Mahakumbh administration and disaster management agencies.

More than a thousand surveillance cameras (some equipped with facial recognition) and drones have been deployed to enhance security monitoring. More than 23,000 Railway Protection Force (RPF) and state police personnel are on ground, supporting the digital surveillance and disaster management systems.

A Vision for the Future

By embracing innovation, even while honouring spirituality, Indian Railways is not merely transporting devotees; it is shaping an experience that bridges the past and the future.

Initiatives undertaken by leveraging state of the art technology, exemplify the happy coexistence of India's rich cultural and spiritual legacy, and the world of emerging scientific innovation.

Mahakumbh 2025, stands as a testimony to the government's dedication to both -preserving India's heritage, and shaping a technology-rich future for the coming generations.