

## OPINION

### Agriculture In 21ST Century- A Myth Or A Fact



Akasha Shahbaz

Agriculture in Pakistan has a specific role to play in fostering economic development, eradicating poverty, and preserving the environment.

Agriculture in Pakistan, which contributes more than 20% of the country's GDP and more than 50% of employment, has a specific role to play in fostering economic development, eradicating poverty, and preserving the environment. At over 3% a year, agricultural growth over the previous thirty years has been spectacular. The sources of growth, however, have evolved through time, starting with the 1960s' seed, fertiliser, and irrigation package, intensifying in the 1970s with increased water and fertiliser use, and then improving with better crop management and incentives in the 1980s.

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### A Dive Into 12 Cutting-Edge Tools For 2023 And Navigating AI Selection



Sayed Shozib

Discover the Leading AI Tools of 2023: From Transformative Power to Conversational Innovation, Unleash the Potential of AI Across Industries and Learn How to Choose the Right Tool for Your Needs. Selecting the optimal AI tool hinges on aligning its features with your distinct needs and prerequisites. As AI solutions span diverse applications such as data analysis, natural language processing, and image recognition, the choice must be tailored to your unique goals. Understanding the particular tasks, scale, and complexity at hand ensures the AI tool chosen will effectively address your specific requirements, ultimately fostering successful outcomes.

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### Agriculture Biotechnology: Benefits And Alternatives



Eza Fatima

Agriculture biotechnology is a section of agricultural science that focuses on modifying living things, such as plants, animals, and microorganisms, using scientific tools and methods. Agricultural biotechnology is a field of science that involves the application of modern genetic techniques and technologies to improve and modify plants, animals, and microorganisms used in agriculture.

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## New Cybersecurity Toolkit Aims To Strengthen Healthcare Sector's Defense

The Cybersecurity Toolkit for Healthcare and Public Health is a pivotal initiative aimed at fortifying the healthcare sector's resilience against the escalating cyber threats it faces.

A prominent US cybersecurity agency has introduced a comprehensive set of online resources specifically tailored to assist IT security leaders in the healthcare industry in enhancing their organization's security posture. The "Cybersecurity Toolkit for Healthcare and Public Health" encompasses a wealth of information, guidance, and practical tools aimed at reducing cyber risks and minimizing the likelihood of successful cyber intrusions within the sector.

This toolkit is a collaborative effort between the Cybersecurity and Infrastructure Security Agency (CISA), the Department of Health and Human Services (HHS), and the Health Sector Coordinating Council (HSCC) Cybersecurity Working Group.

The toolkit includes the following key components:  
CISA's Cyber Hygiene Services: These services employ vulnerability scanning to help organizations diminish their attack surface.  
HHS's Health Industry Cybersecurity Practices: These practices outline the best approaches for achieving greater cyber-resilience.  
HPH Sector Cybersecurity

Framework Implementation Guide: Co-developed by HHS and the HSCC, this guide assists organizations in evaluating and enhancing their level of cyber-resilience. It also provides recommendations on integrating cybersecurity with overall information security and risk management activities.

According to Nitin Natarajan, Deputy Director of CISA, the agency has had to notify over 65 US healthcare organizations about early-stage ransomware activity on their networks in 2023 alone.

Natarajan stated, "Adversaries see healthcare and public health organizations as high value yet relatively easy targets – or what we call target

rich, cyber poor. Given that healthcare organizations have a combination of personally identifiable information, financial information, health records, and countless medical devices, they are essentially a one-stop shop for an adversary."

Andrea Palm, Deputy Secretary of HHS, highlighted the surge in both the frequency and severity of attacks against hospitals and providers in recent years. She emphasized that these attacks not only expose vulnerabilities in the healthcare system but also erode patient trust and ultimately jeopardize patient safety. Palm stressed, "The more they happen, and the longer they last...Read More

### Siemens Energy Seeks German Govt Support, Shares Plummet By 35%

Shares of Siemens Energy experienced a significant 35% drop on Thursday, following the company's request for financial guarantees from the German government. This development comes after the wind power giant garnered attention earlier this year for nullifying its profit forecast, citing a notable surge in failure rates of wind turbine components within its subsidiary, Siemens Gamesa. Siemens Energy's wind division, Siemens Gamesa, faced major setbacks, and the company expressed concerns that these challenges could persist for an extended period. In response to this situation, Siemens Energy stated...Read More

### IBTM World And Swapcard Elevate Event Experience With Tech Upgrades



IBTM World and Swapcard have brought state-of-the-art technology innovations to live business events with the goal of improving the experience for exhibitors and attendees.

IBTM World, a global event catering to the Meeting, Incentives, Conference, and Events (MICE) industry, is set to introduce a suite of innovative

technologies aimed at optimizing attendee interactions and driving better business outcomes.

Taking place from Nov. 28-30 at Fira de Barcelona in Barcelona, the event will feature an upgraded matchmaking platform, now equipped with a guidance tool called WalkMe.

This new addition guides

exhibitors through each step of the preference selection process, enhancing their ability to search for and request appointments with key buyers. In a departure from the past, visitor buyers will also gain access to the matchmaking platform, enabling them to schedule meetings with exhibitors ahead of the event. To further streamline the process, visitor buyers' diaries will sync with the official IBTM World mobile app, ensuring easy schedule management. It's worth noting that visitor buyers must register before Oct. 31 to be eligible for pre-scheduled appointments. Additionally, IBTM World 2023 has introduced an Exhibitor Dashboard, providing exhibitors with a quick overview...Read More

### Government Announces Discontinuation Of New Gas Connections

The Energy Minister of Pakistan announced a major policy change: new gas connections would no longer be approved, citing reasons such as impracticality and economic feasibility.

The Caretaker Energy Minister of Pakistan has announced a major policy change: new gas connections would no longer be approved, citing reasons such as impracticality and economic feasibility. This declaration, issued in Islamabad, marks a sea change in the nation's energy environment.

Energy Minister emphasized that within the next one to two years, domestic gas connections will transition to Liquefied Petroleum Gas (LPG), marking a departure from conventional natural gas supply for households. He clarified that hence-

forth, gas will be exclusively directed towards power plants, aligning with international practices. One of the pivotal assertions made by the caretaker minister was that the surge in gas prices will not escalate the existing circular debt within the sector. This strategic move aims to fortify the financial stability of the gas industry. Minister assured that international gas companies will remain invested in the country, buoyed by this initiative, which is poised to augment gas production. To shield the agricultural sector, the gas price for the fertilizer industry has been left unaltered, preventing an undue burden on farmers. Moreover, the energy minister affirmed that industrial gas prices will be on par with those of neighboring...Read More

### Climate Tech Startup Embarks On Trial To Remove CO2 From Atmosphere

Irish climate tech startup, Silicate, is poised to conduct the inaugural trial of its cutting-edge enhanced weathering technology.

Irish climate tech startup, Silicate, is poised to conduct the inaugural trial of its cutting-edge enhanced weathering technology. This groundbreaking method aims to permanently extract CO2 from the atmosphere and sequester it in the world's oceans for tens of thousands of years.

The trial involves the distribution of 500 tonnes of crushed waste concrete over 50 hectares of farmland near Chicago, equivalent to an area the size of 120 football fields. Over the course of a year, the milled concrete will undergo a process known as enhanced weathering.

As a quick refresher from high

school geography class, chemical weathering is a natural process that slowly breaks down rocks over millions of years by dissolving them into bicarbonate. This form of carbon is then carried into rivers and eventually the sea, where it is either

stored in dissolved form or sequestered in the seabed.

Enhanced weathering expedites this process by pulverizing silicate rocks into powder, increasing their reactive surface area, and then spreading the dust on farmland...Read More



### "Planetary Health Diet Beneficial For Environment & Human Health"

This study provides critical insights into the complex interplay between dietary choices, health outcomes, and environmental impacts.

In a recent study published in JAMA Network Open, researchers looked at the effects of adopting a Planetary Health Diet (PHD) on human and environmental health, with a focus on Chinese Singaporeans in particular.

Diets high in plant-based foods and low in animal products are highly recommended by the PHD. While previous studies have proposed methods for measuring adherence to PHD, they have mostly focused on Western societies and have not considered the caloric requirements at the individual level.

The study drew upon data from the Singapore Chinese Health Study (SCHS), which enrolled individuals without a history of cardiovascular disease or cancer, primarily Cantonese or Hokkien-speaking permanent residents of Singapore, between 1993 and 1998. The participants were followed up until 2020 using record linkage data...Read More

### WWF Urges Alliance At Three Basins Summit To Safeguard Tropical Forests



The summit of the world's three largest forest basins – Amazon, Congo, and South East Asia and South West Pacific – has convened in Brazzaville, marking a critical moment for the future of these vital ecosystems.

WWF calls on the governments of tropical forest countries to forge a strong alliance, fostering coordinated and accelerated efforts towards conserving, sustainably managing, and restoring these precious forest habitats. At present, the fate of the three tropical forest basins hangs in the balance. Deforestation rates are escalating globally, with a staggering 96% occurring in tropical regions.

The Amazon and Congo, the planet's largest tropical forest basins, stand at the precipice of critical tipping points. The risk of sudden forest loss looms, threatening global climate stability and the well-being, food security, and livelihoods of vulnerable...Read More



Saikat Basu

*Environmental philosophy bridges the gap between philosophy and science, fostering collaboration and dialogue between experts in different fields. This interdisciplinary approach is crucial for addressing complex environmental issues*



## Environmental Philosophy: New Treaties And Understandings

**E**nvironmental philosophy is a branch of philosophy that explores the ethical, metaphysical, and epistemological aspects of our relationship with the natural world.

It addresses questions about the value of nature, our moral obligations towards the environment, and the foundations of environmental ethics. Key topics include anthropocentrism vs. ecocentrism, sustainability, and the concept of "deep ecology." It's a field that delves into the philosophical underpinnings of our environmental concerns and guides our ethical decisions in addressing environmental issues.

In a more subtle way, these beings form part of a larger biosphere. There are other beings who are forest dwellers; our current ecological disposition is creating more entropy at higher dimensions (for example, hyperspace and dimensions by Saul Paul Sirag, an American theoretical physicist); where each dimension is interlocked with another, there is quantum tunnelling. If we don't understand the Holocaust movements mentioned by David Bohm, the earth will be endangered by 2040 anyway, so the prediction is 2025 to 2030.

But we need to clear our own homes and be conscious, with a

specific focus on sustainable agriculture. Policy, campaigns, seminars, workshops, awareness building, or campaigns—all these are required and needed to harbour entire medicinal plant gardens like they do in Japan.

It is important to now create a new universal language for arts, social science, and sciences to come together that is all inclusive, both for academia and the betterment of society, and where there is no difference between high and low, sacred and profane, to reach a wider section of our global society.

Environmental philosophy is important for several reasons:

**Ethical Guidance:**

It helps us develop a moral framework for our actions towards the environment. By exploring concepts like intrinsic value in nature and our ethical responsibilities, it guides us in making decisions that respect and protect the environment.

**Environmental Policy:**

Environmental philosophy can inform the development of environmental policies and regulations. It provides a theoretical foundation for decisions on resource management, conservation, and sustainability.

**Critical Thinking:**

It encourages critical thinking about our relationship with nature and challenges anthro-

pocentric views that prioritise human interests above all else. This critical perspective can lead to more thoughtful and responsible environmental practices.

**Interdisciplinary Approach:**

Environmental philosophy bridges the gap between philosophy and science, fostering collaboration and dialogue between experts in different fields. This interdisciplinary approach is crucial for addressing complex environmental issues.

**Long-Term Perspective:**

It encourages us to consider the long-term consequences of our actions on the environment, helping us make decisions that prioritize the well-being of future generations.

**Cultural and social values:**

Environmental philosophy explores how cultural and social values influence our perception of nature. This can lead to a deeper understanding of the cultural factors that contribute to environmental problems.

**Personal Reflection:**

It invites individuals to reflect on their own values, beliefs, and attitudes towards the environment, fostering a sense of environmental stewardship and responsibility.

In its true essence, environmental philosophy provides the

intellectual tools and ethical foundations necessary for addressing environmental challenges and shaping a more sustainable and harmonious relationship between humanity and the natural world. As members of this society, we need to remember that concisely.

The impact of our nature and environment is absolutely calming and serene. We always need to marvel at the unique complexity and diversity around us. If we reflect upon this intricate design of nature and the complex planetary system we live in, it is absolutely amazing and awe-inspiring.

The more we see and learn about them—their colours, symmetry, and functions—the more convinced we are that we actually know very little of the world or the universe around us.

Environmental philosophy teaches us to be sensitive and responsible towards our fragile ecosystem and environment from multiple perspectives.

The large, pathetic, and tragic financial difference between molecular minorities of educated urban masses and the huge majority of rural people suffering in agony. This is mainly due to deliberate governmental policies for political gains so as to exploit ordinary citizens with the help of corrupt bureaucrats, industrialists, and business per-

sonnel for short-term financial gains.

Environmental philosophy, while valuable, does have limitations in its action and discourse. Environmental philosophy often deals with abstract concepts and ethical theories, which can be disconnected from practical solutions to environmental problems.

This abstract nature can limit its direct impact on addressing real-world issues. There is no single, universally accepted environmental philosophy. Different philosophers and schools of thought hold varying views on our ethical responsibilities to the environment. This lack of consensus can hinder effective decision-making and action.

While it can inform environmental policy, environmental philosophy alone may not directly influence government decisions or corporate practices.

Policymakers often prioritize economic and political considerations over philosophical arguments.

Environmental philosophy can be influenced by cultural and regional perspectives, which may not apply universally. What is considered ethically sound in one cultural context may not be in another, making it challenging to develop global environmental ethics.

Environmental philosophy is primarily an academic discipline, and its discourse often occurs within academic circles. This can limit its reach and practical impact beyond the academic community. Some philosophical ideals, such as deep ecology's call for a radical shift in human values and lifestyles, may be seen as impractical or utopian by some, making them challenging to implement in the real world.

While interdisciplinary collaboration is crucial, environmental philosophy can sometimes become disconnected from empirical environmental science,

which is essential for understanding and addressing complex ecological issues.

Philosophical discussions can sometimes lead to a sense of powerlessness or paralysis in the face of environmental challenges. People may feel that addressing these issues requires systemic change beyond their control.

Despite these limitations, environmental philosophy remains a valuable field for generating ethical insights, fostering critical thinking, and providing a foundation for broader environmental discussions and actions. Its impact is often indirect but plays a role in shaping attitudes and influencing decision-makers over the long term.



Shagufta Rasheed

*The painful food inflation has hit Pakistanis amidst a sharp economic downturn, with an estimated GDP growth of only 1.3 percent in FY23 versus 6 percent in FY22*



## Pakistan Confronts Food Crisis And Agonizing Inflation

**T**he painful food inflation has hit Pakistanis amidst a sharp economic downturn, with an estimated GDP growth of only 1.3 percent in FY23 versus 6 percent in FY22.

The painful food inflation has hit Pakistanis amidst a sharp economic downturn, with an estimated GDP growth of only 1.3 percent in FY23 versus 6 percent in FY22. This economic turmoil has left nearly two million people unemployed. It is not difficult to imagine the dire consequences of such skyrocketing food inflation on the livelihood of those who are unemployed and those whose income has taken a nosedive during this economic meltdown.

The monthly inflation rate in Pakistan continued to fall for the third straight month, reaching 27.4% in August 2023. It is the lowest mark hit since January 2023 and further down from 28.3% recorded in the previous month.

The most significant reduction was observed in alcoholic beverages and tobacco (97.5% vs. 102.1% in July), clothing (18.5% vs. 20.4%), housing and utilities (6.3% vs. 10.8%), hotels and restaurants (34.1% vs. 34.7%), and recreation and culture (61.4% vs. 65.9%).

Meanwhile, food inflation posted the least increase in eight months (38.5% vs. 39.5%). On a monthly basis, consumer prices

surged by 1.7%, following a 3.5% hike in the previous month. Further, the core inflation rate, which excludes volatile items, remained steady at 18.4% in August, the same as per the previous month.

We are behind the inflation curve.

The price of wheat flour in Pakistan has been hovering at distressingly high levels for several weeks now. Roti and naan, essential staples of the country, are more expensive due to this steep hike in the flour price. No wonder people are losing their lives in stampedes occurring at the distribution of free wheat flour, and some are committing suicide.

Nonetheless, most of the financially constrained people are managing to scrape on meagre income by working in the shadow economy, coupled with reliance on debts, charity, and the government's cash handouts and subsidies.

In line with wheat inflation, the rates of price rises in other related products were also high. The edible items priced at Rs. 5300 in urban areas back in February 2022 now cost roughly Rs. 10,000. The unsettling truth is that food inflation is here to stay.

Supply shocks caused by the last year's floods, higher international commodity prices, the rupee's depreciation, a lack of administrative checks on retail prices amidst a worsening politi-

cal crisis, hoarding of food commodities, and the unabated smuggling of food items to neighboring Afghanistan all contribute to the likelihood of high food inflation in the foreseeable future.

Stories of the illicit transportation of wheat, wheat flour, and cooking oil to Afghanistan make headlines every day in newspapers. But who cares to stop it amidst the ongoing political and constitutional crisis?

For it, like an increase in support prices, the rupee's depreciation, higher international prices, etc.

"This climate calamity couldn't have come at a worse time, when Pakistan's economy was already struggling with a balance of payments crisis, rising debt, and soaring inflation," Maleeha Lodhi, former Pakistan ambassador to the UN and the UK, told the BBC.

Pakistan's inflation rate was

food to feed people and raw materials for industry, but the country's foreign reserves were running low even before the crisis.

eight months of the fiscal year (between July 2022 and February 2023), forex-starved Pakistan had to spend \$6.687 billion on food imports, according to the Pakistan Bureau of Statistics. Chances are that the full fiscal year's food import bill will exceed \$10 billion.

gling of food items out of the country. Similarly, it is critical to ensure that food commodities are not hoarded and retailers don't overcharge customers or short-sell them.

But such things can be done only in an environment of at least some political stability, which regrettably remains elusive. As a result, food inflation may continue to remain high in the coming months as well. While the central and provincial governments have engaged in a blame game for the crisis, experts say it stems from longstanding deficiencies aggravated by the Russia-Ukraine conflict, the devastating floods of 2022, and the smuggling of wheat to Afghanistan.

Stubbornly high food prices will start easing only when our agricultural output increases and energy prices become stable. This would lead to reduced consumer inflation, making agricultural inputs cheaper. Equally critical is the return of political stability to the country, coupled with a reduction in smuggling and hoarding of food items.

In addressing food inflation, as in all other matters, sincerity of intent counts more than anything else. For decades, our rulers have made it a habit to talk more and do less.

That has resulted in weak or no accountability within government departments and agencies entrusted with certain responsibilities.



Admittedly, smuggling and hoarding of food items alone are not fueling food inflation, and there are solid economic rea-

sons for it, like an increase in support prices, the rupee's depreciation, higher international prices, etc.

At a time when the country is running out of foreign exchange reserves, it is imperative to put effective checks on the smug-

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Akasha Shahbaz

*According to a local survey, genetically modified varieties have far more sustainability in this new world of issues such as continuously raising levels of heat, suddenly drastic changes in climate, drought, salinity, etc*



## Agriculture In 21ST Century- A Myth Or A Fact

**A**griculture in Pakistan has a specific role to play in fostering economic development, eradicating poverty, and preserving the environment.

Agriculture in Pakistan, which contributes more than 20% of the country's GDP and more than 50% of employment, has a specific role to play in fostering economic development, eradicating poverty, and preserving the environment.

At over 3% a year, agricultural growth over the previous thirty years has been spectacular. The sources of growth, however, have evolved through time, starting with the 1960s' seed, fertilizer, and irrigation package, intensifying in the 1970s with increased water and fertilizer use, and then improving with better crop management and incentives in the 1980s.

Further into the 2000s, it changes its direction towards crop improvement and yield improvement technologies to fulfil the needs of the whole emerging population of the country.

In addition, local growth will be heavily influenced by agriculture. In national capitals and the boardrooms of significant food and agribusiness firms, the major orientations for agricultural development have been established for more than 50 years.

The design of agriculture as a base for locally-led, context-specific, stakeholder-led development must change in the twenty-first century. It is crucial to take note of this since there is an increasing call for agricultural

development to be shaped in a more democratic manner regarding land use, the use of agricultural inputs, priority crops, and ecosystem management.

States and municipalities are claiming a stronger say in how their own development processes are shaped, alongside community and farmer-based organizations.

According to a local survey, genetically modified varieties have far more sustainability in this new world of issues such as

continuously raising levels of heat, suddenly drastic changes in climate, drought, salinity, etc.

This fast pace wants faster methods to be implanted, and this can be done by using genetic engineering technology in agriculture.

Genetic engineering techniques are only employed after all other methods have failed, i.e., when the trait to be introduced is absent from the crop's genetics, the trait is very difficult to improve by conventional breeding methods, and it will

take a very long time to introduce or improve such a trait by conventional breeding methods.

Transgenic or genetically modified (GM) crops are those created by genetic engineering. Its basic aim is to increase crop production; hence, it can fulfil the criteria. Modern plant breeding is a multidisciplinary and coordinated process that makes use of and integrates numerous tools and components from conventional breeding techniques, bioinformatics, molecular genetics, molecular biology, and genetic engineering.

As old as agriculture itself, crop improvement refers to the engineering of plants for human benefit. Primitive people switched from hunting and gathering to farming about 10,000 years ago. The process of constantly enhancing the plants that provide us with food, fibre, and livestock started when the switch was turned on.

By enhancing agricultural productivity and income, the sector directly contributes to eradicating poverty by providing employment opportunities and improving the living standards of rural populations.



"If you think technology can solve your security problems, then you don't understand the problems and you don't understand the technology."

—Bruce Schneier

*ChatGPT exemplifies AI progress, reshaping information dissemination and showcasing its multifaceted potential*



Sayyed Shozib

## A Dive Into 12 Cutting-Edge Tools For 2023 And Navigating AI Selection

**D**iscover the Leading AI Tools of 2023: From Transformative Power to Conversational Innovation, Unleash the Potential of AI Across Industries and Learn How to Choose the Right Tool for Your Needs.

Selecting the optimal AI tool hinges on aligning its features with your distinct needs and prerequisites. As AI solutions span diverse applications such as data analysis, natural language processing, and image recognition, the choice must be tailored to your unique goals.

Understanding the particular tasks, scale, and complexity at hand ensures the AI tool chosen will effectively address your specific requirements, ultimately fostering successful outcomes.

Here are best 12 AI tools in 2023:

**ChatGPT**  
OpenAI's ChatGPT chatbot, a remarkable AI achievement, is a versatile tool powered by a vast language model. Its capabilities span text generation, translation, creative content, and informative responses. With linguistic sophistication, it creates coherent content across domains, crafting narratives, arguments, and translations.

Proficiently addressing queries, ChatGPT draws from vast knowledge to provide accessible explanations. This

showcases OpenAI's commitment to advancing natural language processing, highlighting its potential for global communication and learning transformation.

ChatGPT exemplifies AI progress, reshaping information dissemination and showcasing its multifaceted potential.

**Google Cloud AutoML**  
Google Cloud AutoML is an empowering suite of tools in machine learning that enables both experts and novices to develop intricate models without in-depth AI knowledge. It simplifies model creation and deployment, streamlining complex processes through a user-friendly interface.

By automating tasks like data preprocessing and hyperparameter tuning, AutoML reduces intricacies, allowing users to focus on domain-specific challenges. This democratizing approach grants businesses access to AI's potential, facilitating operational enhancements and data-driven decisions without demanding intricate algorithm expertise.

This initiative exemplifies Google's commitment to expanding AI's horizons, bridging technical complexities, and empowering users to leverage machine learning's transformative power for their specific needs.

**Amazon Lex**  
Amazon Lex is a transformative service in technology, sim-

plifying the creation of interactive conversational interfaces. Utilizing natural language processing (NLP), it empowers developers to craft advanced chatbots and virtual assistants that understand user inputs and generate relevant responses.

It demystifies NLP complexities, enabling dynamic user interactions. Beyond comprehension, it generates contextually fitting responses, aided by speech synthesis for immersive conversations. With user-friendly tools, Amazon Lex streamlines development, allowing non-experts to create advanced chatbots.

The impact spans customer support enhancement, improved user interactions, and innovative applications. Overall, Amazon Lex advances human-computer interaction, blending AI with user-focused design for enhanced engagement and driving conversational interfaces to the forefront.

**IBM Watson Assistant**  
IBM Watson Assistant is a pioneering cloud-based AI service that empowers developers to create sophisticated conversational interfaces. It integrates natural language processing and machine learning, comprehending user inputs and generating accurate responses.

Its adaptability allows tailoring to specific industries, while integration with IBM's AI services enhances its capabilities. Watson

Assistant's innovative approach redefines user interactions, enabling lifelike chatbots and virtual assistants that excel in customer support and user engagement.

This service showcases the potential of AI in reshaping technology, making human-like conversations and dynamic interactions a reality, and propelling conversational AI to new horizons.

**Hugging Face Transformers**  
Hugging Face Transformers is a transformative library in the realm of natural language processing (NLP), offering a collection of pre-trained NLP models that revolutionize model development.

By enabling transfer learning, it eliminates the need to create NLP architectures from scratch, democratizing access to advanced language processing capabilities. Its versatility spans text classification, question answering, language generation, and translation, allowing seamless adaptation to specific needs.

The user-friendly interface and comprehensive documentation encourage innovation, empowering both experts and newcomers to experiment and innovate with NLP technologies.

Overall, Hugging Face Transformers shifts NLP model development, accelerating AI research progress and democratizing advanced language solutions across industries.

**DeepMind AlphaFold**  
DeepMind's AlphaFold is an exceptional AI system that has achieved a significant breakthrough by predicting protein structures with remarkable precision. This achievement holds transformative potential for biology and medicine, offering insights into cellular processes, disease mechanisms, and drug interactions.

By employing advanced machine learning techniques, AlphaFold addresses the challenge of protein structure prediction, which was previously time-consuming and costly. Its success underscores AI's capacity to revolutionize complex scientific problems, bridging gaps in our understanding of biology.

This achievement exemplifies AI's cross-disciplinary impact, showcasing how technology can accelerate scientific progress and reshape exploration across domains traditionally reliant on human expertise.

**OpenAI Five**  
OpenAI Five is a groundbreaking AI team created by OpenAI for competitive gaming in Dota 2. It achieved a milestone by surpassing human professionals, demonstrating AI's prowess in complex, real-time decision-making.

This achievement showcased AI's ability to understand intricate gameplay, anticipate opponents' moves, and adapt strategies using reinforcement learn-

ing and neural networks. Beyond gaming, it highlighted AI's potential in various fields, from autonomous vehicles to healthcare.

This victory marked a significant stride, emphasizing AI's capacity to excel in multifaceted, dynamic environments and reshape our approach to intricate problem-solving.

**Google Brain**  
Google Brain, a pioneering AI research force, showcases Google's commitment to pushing AI's boundaries. This team drives advanced AI tech with a deep learning and reinforcement learning focus. Deep learning involves training intricate neural networks for pattern extraction from large datasets.

Google Brain's deep learning contributions have transformed image, speech recognition, and more, revolutionizing industries. Reinforcement learning trains AI agents to optimize actions for specific goals, boosting complex task performance. Open research ethos birthed frameworks like TensorFlow, democratizing AI development. Google Brain's influence extends beyond research, reshaping AI's integration into daily life, fostering innovation, and driving transformative applications. Microsoft Azure Machine Learning Microsoft Azure Machine Learning is a cloud-based platform revolutionizing machine learning...*Read More*



Asif Farrukh

*One of Al.Muqet Lab's flagship products is Greener," with the strength to add happiness to the lives of farmers and policymakers by addressing soil-induced threats to food security*



## Revival Of Unproductive, Degrading, Saline & Water Logged Soils In Pakistan

One of Al.Muqet Lab's flagship products is Greener," with the strength to add happiness to the lives of farmers and policymakers by addressing soil-induced threats to food security.

Al-Muqet Lab Private Limited is a Pakistani company that has been developing agricultural inputs for two decades. These inputs are based on natural ingredients and are designed to improve crop yields, quality, and sustainability.

Mature nations monitor opportunities and threats over a span of decades to initiate work on R&D with the inclusion of local dynamics for risk evasion. Pakistan needs to cater to the food, feed, and fibre requirements of 250 million citizens, 213 million animal heads, 901 million poultry birds, and a rapidly expanding aquaculture industry.

There is an additional stress on domestic supplies from the unaccounted cross-border trade of more than 3 million metric ton of grains to Afghanistan, Iran, and Central Asia. It's easy to import and feed at the cost of rising inflation and a balance of payment deficit, which add misery to the lives of two-thirds of the population.

Threats to Pakistan are multifaceted, including but not limited to policy, security, economy,

energy, politics, rising population, food security, social issues, and a diversity of anti-state activities by domestic and international players.

Pakistan's economy relies intensively on the performance of the agriculture sector to cater to domestic food and industrial sector requirements. This sector dominates foreign exchange earnings from the export of food and fibre crops, livestock, intermediate goods, and finished goods.

The recent pandemic of COVID-19, fast-depleting stocks of phosphate and potassium minerals, climate change, and a manifold increase in international transportation costs stressed the need to focus on indigenization plans for national stability.

These menaces can have a far-reaching impact on food security, human health and safety, poverty, and the livelihoods of the less developed (LD) and Emerging economies (EE) of Pakistan.

Therefore, we require a paradigm shift from current conventional technologies of inputs like fertilisers, synthetic pesticides, and soil conservation to environment-friendly, highly efficient, climate-resilient, soil health, and quality revival technologies with indigenization of R&D in the sector.

Al.Muqet Lab Private Limited has launched agriculture inputs,

an outcome of two decades of R&D in Pakistan, to strengthen food security and the agriculture economy, minimise the import bill of chemical fertilisers and insecticides, and conserve natural resources.

One of Al.Muqet Lab's flagship products is Greener," with the strength to add happiness to the lives of farmers and policy-

makers by addressing soil-induced threats to food security. "Greener" is a nano-technology product that is cost-effective, environment-friendly, a perfect replacement of gypsum to reclaim soil, rejuvenates sick soil, improves soil drainage, revives the biological life of soils, controls soil-borne plant diseases, improves the availability of nutrients fixed in soil, including phosphorous, secondary, and micro-nutrients, minimises the negative impact of high TDS water for irrigation, is a plant growth stimulant, enhances produce health, safe-

With the adoption of this novel technology, farmers can easily control the degradation of farm lands from the negative impacts of synthetic pesticides and other hazardous materials, salinity, and water logging to maximise farm productivity.

Of the current cropped area of 15.7 million hectares in Pakistan, more than 50 percent

agro-ecological zones, type of soil, crop, and farmer willingness to apply fairly.

The cost of "Greener" on uncultivated, saline, and water-logged soils can vary between Rs. 6,000 and Rs. 13,000 per acre. This cost is indicative of the product "Greener" only. Current land development and conservation practises of farmers are fine-tuned to maximise the benefits of this environmentally friendly technology.

Greener will help to conserve bio-diversity, reduce tillage requirements, reduce CO2 emissions, and catalyse a safe and secure food drive for all on our mother land.

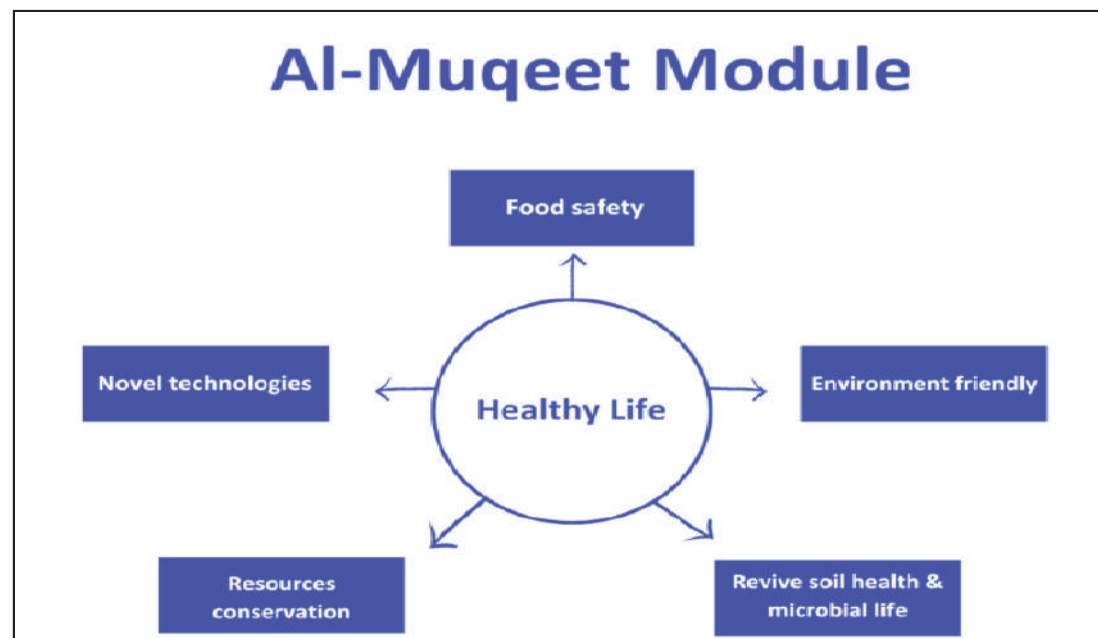
A doctrine of accepting domestic R&D-induced start-ups with innovative solutions for the agriculture sector is required.

Orchards and hardwood trees have faced a serious die-back problem on thousands of acres across Pakistan.

"Greener" helped to save the orchards, native and invasive hard wood trees, of our cooperative farmers.

This product massively reduces the need for additional applications of synthetic fungicides to control soil-borne diseases in plants. An outcome for humanity is better health and safety for farm workers.

For additional information, contact almuqet-lab@gmail.com



makers by addressing soil-induced threats to food security.

"Greener" is a nano-technology product that is cost-effective, environment-friendly, a perfect replacement of gypsum to reclaim soil, rejuvenates sick

ty, and quality, and significantly conserves natural resources with an indigenous high-efficiency novel technology to replace more than a ton of gypsum with only 5-20 kg of "Greener" on an acre.

of farmlands productivity can be immediately enhanced by 10-50 percent with the application of the product "Greener". It requires an investment of Rs 3000-6000 per acre on current cropped land, depending upon



Eza Fatima

*With traditional plant breeding, there is little to no assurance that any specific gene combination will be obtained among the millions of crosses produced. These issues restrict the advancements plant breeders can make, reducing eating time*



## Agriculture Biotechnology: Benefits And Alternatives

Agriculture biotechnology is a section of agricultural science that focuses on modifying living things, such as plants, animals, and microorganisms, using scientific tools and methods.

Agricultural biotechnology is a field of science that involves the application of modern genetic techniques and technologies to improve and modify plants, animals, and microorganisms used in agriculture.

Traditional plant breeding has been employed for hundreds of years to create new crop varieties. However, because of the rising population, the depletion of agricultural resources like land and water, and the apparent plateauing of the yield curve of staple crops, conventional plant breeding is no longer able to meet the demand on a worldwide scale.

Moreover, because the genes of both parents are combined and rearranged more or less randomly in the offspring, undesirable genes can be passed alongside beneficial genes, or while one desirable gene is obtained, another is lost.

With traditional plant breeding, there is little to no assurance that any specific gene combination will be obtained among the millions of crosses produced. These issues restrict

the advancements plant breeders can make, reducing eating time.

Agriculture biotechnology is another method that we can use for breeding. Agriculture biotechnology, or agritech, is a section of agricultural science that focuses on modifying living things, such as plants, animals, and microorganisms, using scientific tools and methods.

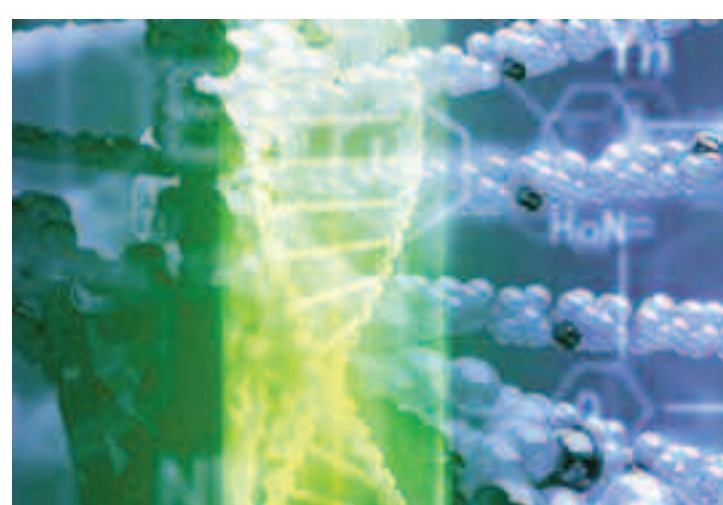
These include genetic engineering, molecular markers, molecular diagnostics, vaccines, and tissue culture. Desired traits are transferred from one type of crop to another. These transgenic crops have favourable traits in terms of flavour, flower colour, growth rate, harvested product size, and pest and disease resistance.

Other than those that are related to medicine, biotechnology has numerous other beneficial applications, including improved agricultural output, crops that are less susceptible to environmental stressors, improved nutrient content of food crops, enhanced meal flavour and appearance and decreased reliance on agricultural chemicals like insecticides, fertilisers, and other things.

In addition to protecting crops from disease, biotechnology has improved the effectiveness and safety of weed and insect pest management. Crops

have been shielded from potentially fatal illnesses via agricultural biotechnology. Crop quality and yield may be enhanced through biotech crops, increasing the profitability of farming.

A few of these crops can aid farmers in doing their work more securely and convenient-



ly. Farmers may now focus more on other economic activities and put less effort into crop management. Enhanced oil compositions in canola, soybean, and maize are two examples of biotech crops that may offer better quality, as is an increased beta-carotene level in rice to help reduce vitamin A shortages.

The activity of plant enzymes that turn aroma precursors into flavouring compounds has

increased thanks to biotechnology, which has improved taste. There are some important benefits of agricultural biotechnology that are discussed. Crop Improvement is one of the main benefits of agricultural biotechnology.

This involves raising produc-

tion potential, nutritional content, and flavour; boosting tolerance to illnesses, pests, and environmental factors (such as salt, drought), and strengthening post-harvest characteristics, including shelf life and storage stability. Researchers can pinpoint and choose particular genes responsible for desired features through methods like marker-assisted breeding, speeding up the conventional breeding

process. Molecular diagnostics is another benefit of agritech. Agricultural biotechnology uses molecular technologies, such as DNA sequencing and polymerase chain reaction (PCR), to precisely identify and diagnose plant diseases, pests, and pathogens.

This facilitates early diagnosis and prompt application of control measures, lowering crop losses and the requirement for broad-spectrum pesticides. Agricultural biotechnology also works on enhancing livestock. As agritech has advantages for farmers, it also has certain disadvantages. The health of individuals could be impacted. It might generate new disease strains; monocultures are indicated.

The application of agricultural biotech in the production of food has advantages and disadvantages. Pesticide and herbicide use is reduced, according to proponents of GM crops, making farming more effective and productive.

Additionally, they assert that GM crops may be more resistant to climate change. GM crops are criticised for possibly posing environmental and health dangers as well as giving major businesses an excessive amount of control over our food supply.

There are alternatives to agricultural biotechnology, notwithstanding the many dif-

fering viewpoints on its advantages and disadvantages. Organic agriculture is one alternative. Neither synthetic chemicals nor genetically modified organisms are used in this kind of agriculture.

To increase agricultural productivity and quality, farmers use natural approaches. Composting, manure, and crop rotation are a few examples of how to do this.

Many people think organic farming is worthwhile because it is better for the environment, even if it can be more labour- and financially-intensive than conventional farming. Permaculture is an alternative to agricultural biotechnology.

The goal of this kind of agriculture is to develop sustainable systems. In order to make permaculture systems more effective and durable, they are created to resemble natural ecosystems. They frequently include elements like rainwater collection, greywater recycling, and food forests.

Farmers who want to become more sustainable and reduce their environmental impact should consider permaculture. Agricultural biotechnology is a contentious issue that has benefits and drawbacks on both sides. Before making any judgments, it is crucial to weigh all of the potential ramifications of this technology, the agriculture biotechnology.