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The science of natural farming
PQNK®

PQNK: the Natural Harvest
An Abundance of Paradoxes

Five Decades of Agricultural Innovation: Research, Development, Adoption, and Adaptation

Interventions and impacts in chronological order

Significant Epochs of Agricultural Development done by us in the History of Pakistan

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Busted the myths - Achieved milestones at a glance

1	Industrial Agriculture misled	Process and machines developed for No-tillage direct seeding farming. PQNK needs less work: go-planting, go-harvesting, and fewer field trips in-between.The machines made it possible to plant counted number seeds at a desired distance to save cost and increase effectiveness, giving bigger crop plants and healthier yield
2	Space for agrochemicals was created by degradation of soil	Practically proved in the fields of thousands of practising farmers that nutrition dense crops can be grown poison free. Crops can be grown without agrochemicals like fertilisers and pesticides, resulting in higher quality, nutrition dense food that not only improves the health of the consumers, but the consumers also need less food. The low glycemic index of the food gives less hungry feels. Besides healthier living beings at less cost, it also lowers the production cost of food, feed, milk, meat, and raw materials.
3	Irrigation is supplementary	Reduced irrigation by up to 100%, totally relying on Rain-Dew & Humidity, and in most other cases by up to 90%. With the Soil Moisture Management (SMM), PQNK is the solution to water scarcity and makes big data collection with drones superfluous.Keeping the plants near to wilting gives a dense minerals-water solution for plants to take up, making them healthier and healthier to eat.
4	PQNK Regeneration Sustainability Sovereignty	We are brainwashed in believing that living in the city is better for us. But in the long run, the opposite will be proven to be true. PQNK farming brings skills that will create jobs ensuring the retention of youth in rural areas, and economic liberation of farmers resulting in earning a respectful living, bringing food security, sovereignty and by doing so mitigating famine, malnutrition and preventing many illnesses. PQNK can change Pakistan's economy from importing foods and commodities to exporting the food produced more than we need, thus bringing prosperity not only to the farmers but to all Pakistanis.
5	Weeds are the Solution	PQNK slowly unravelled nature's algorithms and helped us see that weeds are friends rather than foe and needed for good soil health. By growing PQNK food, we can mitigate floods, droughts, heat, coldness, heavy winds, and other weather challenges.
6	More production cycles	PQNK makes it possible to produce freshly harvested food year-round. This consistent supply is based on multiple/ circular production for many crops and gives the highest quality at the lowest cost
7	PQNK the solution for overall Wellbeing	PQNK is not only the solution for agriculture, wellbeing, and health. By reversing the degeneration of the soil, the aquifers get replenished, the water in the atmosphere gets reduced, and the degeneration of the oceans gets reversed.

One intervention, seven myths busted

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Interventions and achievements in chronological order 1973-77

Year	Description	Impact
1973	Imported farm implements such as: Ridger, Plate Planter, Tractor mounted boom sprayer and soil scrapper, fine levelers, and adopted them to local conditions	Introduction of new range of farm impliments, best practices, and seeds. It was the 1st showcase for industrial agriculture
1973-74	Converted the farm from small fields to long strips, precision land levelling for mechanized furrow irrigation. This shift facilitates improved irrigation and enhances application efficiency through the use of syphon tubes to irrigate each furrow individually.	The process conserves water and machine hours, necessitating a transition from the Bunna-Kiarri layout to elongated fields for mechanized farming.
1973 -74	Imported Seed from Cargill, DeltaPine, and other companies for Corn, Cotton, Sunflower, Potato. Introduced production of corn in spring and propagated in the region, in collaboration with Refhan Maize. Developed Potato-Corn-Potato rotation. The initiative led to an increase in crop production, yield, and diversity. Corn, in particular, emerged as the second largest crop, serving as feed for dairy and poultry animals.	The impact of this intervention transformed Pakpattan, Depalpur, Okara, Sahiwal, and the surrounding districts into hubs for agricultural productivity, positioning them as leaders in the sector. Additionally, potato became a major cash crop of the region, and hundreds of cold storages developed, which changed the landscape in a way not seen anywhere else in Pakistan.
1974	Deltapine-15 cotton variety was a game changer. The yield of seed cotton increased from 15 mounds (600 kg) to 45 (1,800 kg) mounds per acre. Lint to seed ratio was also increased, and so did the fibre length and softness. The Deltapine variety had the character to produce a flower alongside each plant leaf. This character was later developed in a locally mutagenesis variety NIAB-78. Visionary initiatives have transformed Pakistan's agricultural landscape.	By increasing crop production, yield, and diversity, self-sufficiency has been ensured, and farmers' income has received a boost. The cotton industry has exported cotton and made-ups globally, driving its growth. As a result, Pakistan is now renowned for its cotton production, engaging a substantial labour force and propelling the textile industry. Moreover, these efforts have earned valuable foreign exchange, setting Pakistan apart in this achievement.
1977	Based on the irrigation system implemented on our farm, the Punjab Government, with assistance from USAID, established the On-Farm Water Management project OFWM, which eventually evolved into a department.	The benefits of this irrigation system could not be applied to a larger area, as the On-Farm Water Management (OFWM) project shifted its focus to the brick-lining of canals to field water courses.

Syphon tubes to irrigate

JD planter for precision seeding - Deltapine cotton after earthing up

Transition from conventional potato to Industrial

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Interventions and achievements in chronological order 1978-83

Year	Description	Impact
1978	Adopted sugarcane production practices used by farmers in Bundaberg, Queensland, Australia. Later Baba Farid Sugar Mill propagated this process in Jhang zone. Because of which sugar mills became viable.	Modern cultivation of sugarcane crop; later promoted by other sugar mills, this intervention increased yields and profitability for the sugar mill & farmers.
1981	Established IMT tractors and farm machinery dealership in Sahiwal. It became a hub for technology dispensation in industrial farming. It facilitated the delivery of quality seeds, suitable farm machinery for adaptations, and agrochemicals to support plant protection and yield. However, the sales of agrochemicals were subsequently suspended on the realization of the adverse effects caused by these poisons.	This technological hub played a pivotal role in raising awareness, promoted action-learning, and disseminated best practices among farmers. As a result, it significantly impacted agricultural production in the larger region.
1981	We established a state-of-the-art production facility for farm machinery. This bold initiative, involving modification, adaptation, customization, and the development of new farm machines, played a pivotal role in mechanizing agriculture across Pakistan and beyond. This initiative established farm machinery production facilities in Sahiwal, Mian Chunnu, Okara, and Depalpur.	These facilities have evolved into a significant small-scale industry, fostering skill development, engaging labour, and facilitating farmers while boosting the farm productivity and overall economy.
1982	Established Ford tractors and farm machinery dealership in Jhang.	Fore said objectives and related benefits were achieved.
1983	Established Massey Ferguson tractors and farm machinery dealership in Bahawalnagar and for Fiat in Okara	Fore said objectives and related benefits were achieved.
1983	Moved operational headquarter to Lahore	For countrywide presence and liaison for institutional support
1983	Obtained national distributorship from Sperry New Holland for the full range of harvesting machinery, achieving over 70% market share of combine harvesters, which has been maintained year after year. Selection of machines, operators training, and after sales services eliminated the competition. Most of the harvesting machinery presently in operation is of the brand New Holland.	Intervention solved shortages of the labour during harvest time and saved infield harvesting losses and also protected crops from climate challenges.

Adoption of Australian process of sugarcane

Bulk soil shifter

Tilling, beds shaping

Combine Harvestor

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Interventions and achievements in chronological order 1984-87

Year	Description	Impact
1984	Since the 1970s, our association with Cargill has led to seed imports for our own use. Encouraged by our collaboration, Cargill established a seed company and a citrus juice concentrate plant.	This partnership has significantly impacted local agriculture and the citrus industry.
1984	We secured the national distributorship from Spectra Physics and introduced laser levelling equipment. This technology paved the way for precision farming, and the Government of Punjab subsidized these machines through OFWM.	Water conservation and enhanced productivity have led to the emergence of a large number of Service Providers (SPs) offering laser levelling services across various regions.
1986	Obtained National Distributorship from Long Manufacturing USA and introduced cutting-edge technology for peanuts planting and harvesting, including Peanut Combine Harvesters. Peanuts (Groundnut), a summer crop, play a crucial role in meeting the national edible oil requirements. Other oilseed crops face challenges due to the short spring and autumn seasons in Pakistan, resulting in lower yields. These crops often don't get sufficient time to mature, impacted by excessive heat or cold.	Targeting the upscaled Pothohar rain-fed region, we encountered challenges. Unfortunately, technology couldn't excel due to the low organic matter in the soil. Harvesting remains a major restriction in increasing crop area. Moreover, the lack of funding for farmers hindered the development of Service Providers (SPs). An effective and impactful initiative is now required to substitute edible oil imports..
1987	Acquired the National Distributorship for Toft Sugarcane Harvesters from Australia (now owned by Case IH) and pioneered the introduction of this cutting-edge technology. Sugarcane harvesting, traditionally a labor-intensive process involving five manual steps cutting, stripping, bundling, loading onto trailers, and unloading onto conveyors at sugar mills, proved to be both costly and time-consuming. Manual harvesting resulted in operational delays and, most significantly, the cutting of cane by hand a few inches above the ground, compromising the segment with the highest sugar content. Successfully implemented this technology at Fuji Sugar Mill Sind and subsequently at Itefaq Sugar Mills Sahiwal.	Sugarcane development and procurement staff are hesitant to embrace mechanisation due to the various benefits embedded in the current operating system. Nevertheless, following notable successes, numerous harvesters operating in the Rahim Yar Khan region are now managed directly by sugar mills. The integration of the PQNK production process and mechanical harvesting has the potential to garner acceptance from all stakeholders, including consumers and the government, in terms of production, processing, and sales.

Laser leveler

Peanut harvester

Toft sugarcane harvester

Tipping trailer

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Interventions and achievements in chronological order 1987-91

Year	Description	Impact
1987	As the National Distributorship of Butler Manufacturing Inc. USA, we introduced metallic silos for grain storage. Transitioned from traditional paging-stacking storage to a bulk storage system, resulting in: 1. Savings on bags and labour for filling and handling. 2. Reduced loss of quality and pilferage.	The private sector, especially rice, flour, and feed mills, adopted the bulk storage system. However, government departments resisted adaption due to personal benefits they derived at each step in the old system.
1987	1987 Introduced Wide-Span Buildings from Butler USA: These innovative structures offer wide spans (pillar-less buildings), resulting in significant time and cost savings. The first building was installed at the Pioneer Seed Plant in Sahiwal.	Numerous companies followed suit, replicating the production designs. This adoption benefited major companies across various industries.
1988	Introduced mechanised Cotton Pickers via National Distributorship from Case International Harvester to address the labour shortages for cotton picking, following a question raised in the National Assembly. The machine was inaugurated at the Punjab Seed Farm in Perowal.	Unfortunately, the investment did not yield immediate results, as farmers were unprepared for mechanical cotton picking. To operate the machine successfully, changes in production processes were necessary, including: 1. Wide Row Spacing 2. Short Plant Height 3. Single Picking Operation.
1989	Ford Tractor Manufacturing License in Pakistan: Based on our successful sales of New Holland Combine Harvesters and other equipment, Ford granted us a license to manufacture Ford Tractors in Pakistan.	The project was a resounding success, delivering high-quality tractors to farmers. Their reliability and longevity have been impressive, with tractors delivered three decades ago still operating smoothly.
1991	Establishment of Pioneer Seed Company in Pakistan: Building upon the success of Cargill's Seed Business, Pioneer Seed Company was approached to introduce, develop, and process quality seeds in Pakistan. Pioneer enthusiastically agreed, and we installed their plant in Sahiwal.	This initiative formally established seed industry; yield increased manyfold, especially of corn. Corn became the 2nd largest crop and served many industries. Corn production assured the success of poultry, as well as dairy production. Without this intervention, it would have been difficult to meet Pakistan's inhabitants' protein requirements.

Silos & Wide-span buildings

Case IH Cotton picker

Prime Minister Nawaz Sharif Presents Award to Mr. Asif Sharif on setting up Pioneer Seed Plant

Interventions and achievements in chronological order 1992-96

Year	Description	Impact
1992-93	Consolidation of businesses and disposing of dealerships in Sahiwal, Jhang, Okara, and Bahawalnagar.	Organized operational management
1994	Ford Agricultural Division Sold to Fiat Italy: As a consequence, Ford Tractor assembly was discontinued worldwide.	The market suffered the loss of a highly reliable product essential for efficient farm operations.
1994	Obtained a license to manufacture Ursus tractors, which are MF-designed tractors made in Poland	Provided cost-effective tractors
1994-96	**Assisted the Government of Pakistan** in initiatives related to the farm sector, especially delinking prices of farm produce from Government-owned corporations for free float and, as a result, linking them with international markets. Until this point, only Government Corporations could export agricultural commodities. Some of the steps taken by the committee formed by Prime Minister Benazir Bhutto: • Agricultural commodities prices were controlled by the government through the Agricultural Price Commission. • Agricultural commodities were traded by Government corporations, i.e., Cotton by Cotton Trading Corp, Rice by Rice Export Corp, Wheat by PASSCO, and provincial Food departments. • If the price for a pound of cotton lint in the international market was 70 cents, the local price would be below 25 cents, Farmers' margins were so thin that they were surviving by reducing living standards or moving to spaces other than agricultural production. On the recommendations of the committee, the Agricultural Price Commission was abolished, and prices were automatically linked with international markets. While produce prices were assured to fetch international prices, a program to reduce the cost of production was taken into account. Two steps were taken: • Multinational companies had a monopoly over agrochemicals; the committee decided to break this monopoly by using generic names for all agrochemicals • Locally assembled tractors were of low quality and at higher prices due to the monopoly of the assemblers. The import of tractors was allowed to introduce some competition.	Seed cotton prices surged from 400 Rs to 1,600 Rs per 40 kg mound overnight. A similar situation unfolded for other commodities. Consequently, crop production became profitable, and land and land-lease prices skyrocketed. However, we couldn't capitalize on the benefits of lower production costs when selling at international prices due to a change in the government. A program was going to be implemented to manage production, substitute imports, and generate exportable surpluses to balance trade deficits. Prices of agrochemicals dropped by at least 70%. Under the Awammi Tractors Scheme, over 30,000 European standard tractors were imported and delivered to small farmers at almost 50% less than the price of locally assembled tractors.

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Interventions and achievements in chronological order 1995-2002

Year	Description	Impact
1995	While traveling from Houston to El Paso, we noticed a cotton research farm alongside the highway. Curious, we decided to visit. The farm manager graciously showed us around the cotton fields. During our tour, while standing in a particular cotton field, the manager mentioned that they had developed a variety resistant to bollworms. We appreciated their work and continued on our journey. Our curiosity led us to further research. We discovered that bollworm-resistant seeds were available for testing by selected farmers in the US. We requested one of our associates to arrange twenty kilograms of these seeds. We distributed them among several farmers in the Pakpattan area for testing. The results were promising—the seed performed well, and the growers shared it with others. This variety quickly spread, transforming the landscape of cotton production. Our quest for knowledge continued. We delved into the technology behind this remarkable development. It was revealed that BT (a soil-borne bacterium) produces a protein toxic to young larvae, provided the soil system allows the microbes to survive. Armed with this understanding, we studied natural habitats to identify any shortcomings in our conventional industrial production system. In the following pages, we will share the details of these developments.	This intervention was implemented when the cotton crop faced severe damage from bollworms. It played a crucial role in helping farmers sustain their crops and significantly boosted the textile economy. This marked our second significant contribution to cotton production. Previously, we introduced Deltapine cotton seeds in 1974. By identifying and propagating these seeds, we empowered farmers to produce cotton profitably. This not only benefited the textile industry but also had a positive impact on our national economy. Thanks to these seeds, farmers were able to cultivate cotton successfully, contributing to the overall prosperity of our country. This seed is famously known as BT, which stands for genetically modified cotton seed. However, after a few years, bollworms—especially the pink bollworm—developed resistance, causing heavy crop damage. It was during this crisis that PQNK emerged as a rescue.
1997	Became national distributors of Kenwood Japan and introduced audio systems to car assembly units and the public.	Supported local car manufacturing and facilitated technology transfer
2000	Established an assembly plant for air conditioners and home appliances under the brand name 'Kentax'	Promoted energy-efficient systems, technology transfer, and skills
2002	Became strategic partners of Altitude Software and introduced Call/ Contact Centers for Telco, banks, online businesses, payments, distant education, and healthcare	Contributed to public services

KENWOOD

Kentex

altitude
software

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Adversity, Conceptualization and new beginning 2002-08

Year	Description	Impact
2002-6	The world is governed by the New World Order, carefully designed and effectively implemented. Challenging capital operators is not tolerated. We engaged in activities that attracted attention. State tyranny took action, halting our business operations and imprisoning me for nearly four years without any charges, on actions of their own. This is what they do to those who deliver and contribute to overall wellbeing. I feel honored and proud to have withstood oppression and tyranny whilst serving my fellow farming community.	Development work came to a halt, work in progress was lost, and so was the technical and financial support to the farmers. The positive aspect of the setback was that I utilised my time productively and conceived nature based production processes that will change the food production system as we know it.
2002-6	**Conceptualization:** The discovery of BT bacteria, natural guardians that protect plants from caterpillars, sparked my fascination with the intricate balance of natural ecosystems. Driven by a desire to safeguard the environment and the resources that sustain life, I embarked on a deeper exploration of this realm, culminating in the development of PQNK.	
2007	**New Beginning:** After a four-year suspension, during which we lost new business acumen, resources, and reliable connections, embarking on a new beginning was no easy feat. Social biases created resistance, as credibility emerged as the most crucial feature for legitimate and respectful progress in life. In essence, our new beginning transcended mere resumption; it was about transforming the trajectory of progress rooted in resilience and wisdom.	Our start was indeed humble, yet our intrinsic abilities played a crucial role. We meticulously outlined a clear path, refining it to adapt to new realities and harness our newly acquired strengths. This transformative journey was guided by the profound realization of the inherent strength within natural algorithms and deep thinking during my confinement. In essence, our new beginning transcended mere resumption; it was about revolutionizing the food supply chain, rooted in the wisdom of the natural ecosystem.
2007-8	We held a valid license to assemble, manufacture, and market Ursus-branded tractors in Pakistan and beyond. To spearhead this endeavor and facilitate the transformation of farm machinery, we established a new company called FarmAll Technology. Its mission extended beyond machinery as it served as a hub for disseminating knowledge on production agriculture.	We meticulously crafted and introduced three models of tractors, ensuring they adhered to the highest quality standards. Additionally, we established a separate internal setup to create a new generation of machines, aligning them with our evolving understanding of production agriculture.

Ursus Tractors

All-in-One: Tillage, Bed making & Planting

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Interventions and achievements in chronological order 2007-08

Year	Description	Impact
2007	**The introduction of Solar** Irrigation**,** Drinking Water Systems and household electrification made a profound impact, especially in ensuring year-round food production. Here's why it mattered: **Water Security:** By harnessing solar energy, we provided a reliable water supply for irrigation. This stability allowed farmers to cultivate crops throughout the year, reducing dependence on seasonal rainfall. **Food Self-Sufficiency:** Consistent water availability translated into increased agricultural productivity. Farmers could grow multiple crops, enhance yields, and contribute to local food security. **Economic Resilience:** Solar-powered water systems mitigated the risks posed by unreliable electricity. Farmers no longer faced disruptions due to power outages, ensuring a steady income from their produce. **Community Well-Being:** Access to clean drinking water improved overall health and well-being. It also empowered communities by reducing the burden of fetching water from distant sources. In essence, this intervention wasn't just about technology; it was about sustenance, resilience, and progress for generations to come. **Household Electrification:** Beyond irrigation and drinking water, these solar systems also electrified households. Families gained access to clean and sustainable energy for lighting, cooking, and powering essential appliances. This transformation improved their quality of life and fostered economic activities within the community.	The implementation of solar systems in remote areas had several transformative effects. First, it provided an alternative energy source, reducing dependence on conventional electricity. Second, clean water became more accessible for both irrigation and household needs, liberating many households from feudal control. Third, the initiative promoted liberty and sustainability, ensuring long-term access to essential resources. Fourth, increased water availability led to improved farm productivity, benefiting livelihoods. Finally, beyond water, these solar systems electrified households, illuminating homes and powering essential appliances. Solar water pumping systems were installed in Cholistan - 1st time ever
2008	Our journey marked the transformation of agricultural production systems, aligning them with the natural algorithms governing vegetation, soil fertility, and plant protection. This shift aimed to restore ecosystems that had suffered degradation due to practices that, ironically, were labeled 'conventional' and 'industrial.' Our destination: the Amazon Forests—a timeless marvel with ancient roots stretching back through millennia. As we explored, our eyes widened in awe. Thriving vegetation, undeterred by the passage of millions of years, flourished without depleting precious resources." May the Amazon's resilience inspire us to tread lightly upon this Earth.	We discovered that four practices in our agricultural production process are detrimental to the natural ecosystem: 1. Soil inundation with water 2. Soil disturbance through tillage 3. Keeping soil bare without the cover of organic mulch 4. Uni-cropping, which restricts biodiversity

1st Solor water pump being inaugurated by Chief Minister Punjab

Mr. Asif Sharif explaining about solar system to CM Punjab

Water in Cholistan

Natural ecosystem

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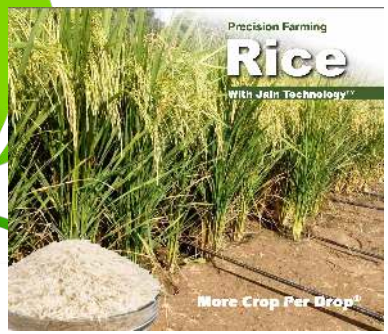
Revolutionizing Rice Cultivation for a Sustainable Future 2008

Description	Impact
Persuading the understanding reached on the study of natural habitat and ecosystem in the Amazon, we decided to take on the most challenging: rice crop, as our first adaptation. We adopted a step-by-step approach and chose to grow rice in moist soil rather than inundated soil. After levelling a 44-acre field, we created raised beds and broke the hardpan. Transplanting two-week-old seedlings into hot, dry soil posed a challenge. To address this, we designed a dry soil transplanter capable of punching holes and filling them with water, whilst our team carefully placed seedlings in each water-filled pit. We followed the spacing recommendations of the System of Rice Intensification (SRI) promoted by Cornell University. The experiment was successful. Our next challenge was weed management. Conventional solutions involve inundated soil combined with herbicides, but this approach did not align with our vision. Instead, we designed a precision weeder and aerator. The process worked exceptionally well, allowing us to save at least 70% of water and other inputs, including labour. This marked the first step toward our consolidated natural approach, which we initially named Paradoxical Agriculture (PA). Later, we renamed it PQNK (pronounced as 'picnic"), standing for Paedar Qudratti Nizam Kashatqari, which means: a sustainable natural farming system. We presented this technology at the International Rice Congress held in Hanoi in 2011. Today, it is being adopted by countries such as Israel, Korea, China, and many others.	The technology showcased here, revolutionizes rice cultivation by significantly reducing water consumption through our moist soil method. Precision weeding and aeration techniques, devoid of herbicides, enhance sustainability and soil health. PQNK epitomizes sustainable natural farming, fostering a greener and resilient future, showcasing how innovation harmonizes with nature for widespread adoption. As process matured, weeder is replaced by organic mulch and transplanter with precision no-till planter. Now process is shifted to DSR.

Dry soil transplanter

Precision weeder aerator

Israel drip Co. copying



Korea, Thailand & China

Rice transplanting in dry soil on beds

Int Rice Congress Hanoi 2011

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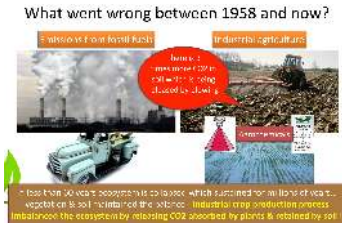
Successful production of rice on raised beds in moist soil revealed our ignorances towards sustainable food production - 2008

Year/ subject	Description
2008	Understanding the natural algorithms of soil fertility, plant propagation, plant protection, and water supply arrangements is mind-boggling. Especially when we realise that this sustained over 1.5 million lifeforms for at least 400 million years without depleting any resources! It makes one think about our ignorance, the toeing augmentation of the tillage-based production system which initiated some 10,000 years ago by the homo sapiens, presently seemingly driven by financial motivation rather than by the wish for sustainability and provision of nutrient-dense food at an affordable cost. Agriculture is a vast and complex field. The purpose of this document is not to provide comprehensive education. Instead, it aims to list our interventions and contributions to the sector that have demonstrated a significant impact. Some of the algorithms are listed below to enhance general awareness and to motivate researchers in adoption of innovative thinking for a brighter future. The natural ecosystem is robust. Plants don't require any human intervention to grow and produce well. Extensive experimentation has been done during the past fifteen years. Hundreds of thousands of farmers are benefiting from PQNK, a sustainable natural farming system. Our work is open source and, as such, placed on YouTube in all formates (speech, text, video). As we are self-funded and a non-commercial entity, we spend limited resources on fancy stuff and keep focused on R&D. New scientific understandings are listed below, which resulted in huge following, benefiting farmers across the world:
PQNK the Natural production system	• The soil and the atmosphere contain everything necessary for food production to sustain all inhabitants. Water serves as a carrier of minerals and helps plants maintain a moderate temperature, whilst sunlight acts as the driving force. • The natural water supply system comprises rain, dew, and humidity. They provide sufficient moisture for crop growth everywhere without the need for irrigation. • The soil contains all the essential minerals in insoluble form, but microbes render them soluble based on plant's requirements. Biology takes over from chemistry, creating an environment conducive to the flourishing of plants. • Soil, in no case, should be inundated because that drowns soil life. • Various species of BT bacteria in the soil protect plants, with each type targeting a different set of insects. • Tillage, the disturbance of soil, disrupts the ecosystem and contributes to the issues faced by industrial agricultural. • Weeds thrive in areas where the soil is compacted (leading to reduced water absorption capacity) or where the soil is left exposed. Weed roots play a crucial role in aerating the soil, nourishing microbes, and maintaining soil temperature with its foliage. They don't compete with plants for the minerals in the soil, as they are present in abundance. **By adhering to the natural production system named PQNK, which requires no purchased inputs, we can achieve abundant nutrition-dense food. This approach is essential for regeneration and sustainability, providing the only viable option for ensuring a resilient future.**

Burying seed
to
Burying ecosystem



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Revolutionising Agriculture: Precision Planting and Sustainable Practices for Nutrition-Dense Crops, Enhanced Yield, and Cost Efficiency

Description

The cultivation of major crops has undergone a significant transformation by transitioning to permanent raised beds and utilizing the Slit-Insertion Precision Planter (SIPP).

The SIPP is an innovative planter designed and perfected over several years to accommodate various seed types and crop residues. It allows for precise planting on raised beds, with the capability to plant multiple crops simultaneously.

Precision Planter (SIPP) at work

Cotton and Sesame

Impact

1. **Tillage Elimination:** By shifting to permanent raised beds, the need for tillage in soil, and seed bed preparation got eliminated. This not only conserves soil structure but also contributes to sustainable farming practices by reducing soil erosion.
2. **Time and Energy Savings:** The SIPP enables the planting of multiple crops in one go, resulting in significant time and energy savings. This efficiency is crucial for optimizing agricultural operations and increasing overall productivity.
3. **Cost Efficiency:** The implementation of raised beds and the use of the SIPP contribute to a substantial reduction in the overall cost of operation. This is achieved through savings in labour, fuel, and resources associated with traditional tillage methods.
4. **Precision Planting:** The SIPP ensures the desired seed-to-seed distance, leading to accurate plant-to-plant spacing. This precision in planting has a direct impact on crop yield, as it facilitates optimal nutrient absorption and growth conditions for each plant.
5. **Crop Diversity:** The ability to plant multiple crops in one go enhances crop diversity, allowing for strategic planning and cultivation. This flexibility is a key factor in adapting to changing market demands and optimising resource utilization.
6. **Nutrient-Rich Yield:** The combination of permanent raised beds and precise planting contributes to the production of highest quality, nutrient-dense food. This not only meets the demand for nutritious crops but also supports the overall well-being of consumers.

In summary, the adoption of permanent raised beds and the Slit-Insertion Precision Planter represents a holistic approach to modernising agricultural practices. The associated benefits include increased efficiency, reduced costs, enhanced precision, and a positive impact on the quality of the harvested crops. These improvements align with sustainable farming principles and contribute to the long-term viability of agricultural systems.

SIPP

Mulch reduces soil temperature

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Revitalising Wheat Agriculture: A Sustainable Paradigm Shift for Enhanced Nutrition, Taste, and Global Competitiveness

Description

The evolution of wheat production, initially influenced by the Green Revolution in the 1960s. with the introduction of high-yielding Mexican wheat crosses, aimed at maximising yield per acre and through the use of excessive fertilisers. However, these crosses were associated with grasses that were high in gluten and high on the glycemic index, posing health concerns and offering lower usable energy.

Wheat up to 78 tiller per hill

Impact

1. **Evolution through Cross Pollination:** The primary method of evolution involved cross-pollination, where the most vigorous mates crossbred, theoretically leading to more productive subsequent generations.
2. **Selective Modification Criteria:** Selection of crosses prioritised yield and appearance, with limited consideration for taste, which is intricately linked to nutrition density. This disconnection from natural provisions led to increased reliance on agrochemicals, further depleting essential minerals for a balanced and healthy life.
3. **Reconnection with Nature: S**teps were taken to reconnect plants with nature, resulting in reduced production costs, increased mineral saturation, improved taste, and enhanced nutrition density. Many farmers are now cultivating high-quality wheat at a lower cost by following PQNK.
4. **Exploration of Heirloom Seeds:** Exploration and collection of heirloom seeds, whose potential had not been fully explored, were sown in conventional production systems, yielding low results.
5. **Vigorous Traits Selection:** A program is underway to select and collect vigorous traits in plants to restore lost nutrition in food.
6. **Sustainable Wheat Cultivation:** With innovative practices, wheat can now be grown with as little as 8 kg of seed per acre, and an 80% reduction in water usage.
7. **Exportable Surplus:** The introduction of PQNK on a larger scale has the potential to substitute imports and generate more than Pakistan needs for export, contributing to agricultural sustainability and economic growth.

In summary, advancements in wheat production involve a shift towards reconnecting with nature, exploring heirloom seeds, and implementing innovative practices like PQNK. These changes aim to enhance nutritional density, improve taste, and create a sustainable and cost-effective approach to wheat cultivation, with the potential to generate good quality export wheat.

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Transformative Advances in Corn Cultivation: Maximizing Yields, Cost Efficiency, and Sustainability through the PQNK

Description	Impact
Over the years, corn yields have witnessed a substantial increase, from the conventional 30 mounds (1,200 kg) per acre in the early 70s to the current yield of over 100 mounds (4,000 kg) per acre. This progress was achieved through the introduction of new corn varieties by Cargill, Refhan Maize, Pioneer, and others. However, the intensification of inputs led to increased production costs, with 26,000 seeds being planted under traditional methods.	1. **Enhanced Yield with PQNK Process:** Implementation of the PQNK process has significantly increased plant population for spring crops to over 40,000, resulting in a remarkable yield increase while reducing inputs by over 70%. This change has had a positive impact on degraded and degenerated soil, leading to ongoing decreases in input requirements. 2. **Cost Reduction through Sustainable Practices:** During the first crop and occasionally for the second crop, corn still needs some fertiliser, yet it can be reduced to a minimum of 70%. This, together with the reduced water application, resulted in a cost-saving of over 50,000 Rs. per acre. This sustainable approach not only reduces the financial burden on farmers but also contributes to environmentally friendly and for farmers healthier farming practices. 3. **Increased Crop Frequency:** Many farmers who adopted the PQNK process can now cultivate three crops per acre per year. The simplified process of planting a new crop, typically following the harvester, allows for efficient crop rotation and increased productivity. 4. **Significant Agricultural Economic Impact:** The success of corn cultivation is crucial for maintaining the prices of chicken and dairy products. The increased yield and cost efficiency contribute to a more stable and competitive agricultural economy. In summary, the evolution of corn cultivation practices, especially through the adoption of the PQNK process, has led to substantial increases in yield, cost savings, and overall sustainability. These improvements not only benefit individual farmers but also play a vital role in supporting the broader agricultural economy, particularly in influencing the prices of for consumers essential products such as chicken and dairy.

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PQNK Innovation in Potato Cultivation: Year-Round Planting, Precision Methods, and Sustainable Practices for Enhanced Yield and Cost Efficiency

Description	Impact
The cultivation of major potato crops, primarily undertaken in the autumn, faces challenges due to a short growing season. Soil temperatures above 30°C until the end of November can lead to the bursting of potato seeds if planted at this temperature. This results in a limited window for crop development, causing low yields. However, if frost is delayed, the yield improves. The PQNK approach has effectively addressed this issue, enabling earlier planting and extended maturity periods, ultimately reducing the cost of production.	1. **Year-Round Planting with Organic Mulch:** Utilizing organic mulch as insulation lowers soil temperature by 30 degrees Celsius during the hot summer, maintaining it between 15 and 25 degrees year-round. This enables year-round circular production, breaking the constraints of the short autumn season and providing flexibility in planting. 2. **Increased Plant Density with Reduced Inputs:** Planting four rows of single-eye seed (cut seed) reduces seed rates by 50%, results in 58,000 plants per acre, a significant increase from the traditional maximum of 36,000. Pruning of potato vines manages foliage for increased tuber size. 3. **Enhanced Efficiency with SIPP:** The SIPP facilitates planting on new or matured beds without land preparation, eliminating the need for water in many cases. This precision planter optimizes the planting process and contributes to resource conservation. 4. **Innovative Approach for Small Holders:** A specialized system for smallholders involves placing seeds on beds (not buried) and covering them with thick organic mulch. This maintains the soil moisture without additional inputs, and reduces the costs of production by at least 80%, and improves both quality and shelf life. In summary, the adoption of the PQNK approach, organic mulch insulation, innovative planting methods, and the use of precision planters has revolutionized potato cultivation. These improvements result in increased planting flexibility, higher plant density, reduced inputs, and significantly decreased production costs, all while enhancing the overall quality and shelf life of the harvested potatoes.

Potato fields, no agrochemicals applied

PQNK utilise 30% more space

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Revolutionising Sugarcane Production: PQNK Principles for Enhanced Yield, Sugar Recovery, and Sustainable Industry Practices

Description

The sugar industry faces challenges due to strained relationships between farmers, sugar mills, the government, and consumers, resulting from low yield, high production costs, and low sugar recovery. In the early 80s, we successfully introduced the Australian production system in collaboration with Baba Farid Sugar Mill Jhang, reviving a failed sugar mill project.

Sugarcane and farm visits

Impact

1. **PQNK Intervention for Higher Yield and Sugar Recovery:** Our latest intervention involves a sugarcane production process using PQNK principles, yielding high at little to no cost. The sugarcane produced, contains at least 2% higher recovery, translating to 44% more sugar from the same weight of the sugarcane (same wattage). Many individual farmers have adopted this process and are reaping its benefits.
2. **Successful Implementation at Al-Noor Sugar Mill:** Al-Noor Sugar Mill in Sindh set up 30 PQNK showcases at influential farms, resulting in some farmers achieving a remarkable 2,800 mounds yield (112 tons) per acre with higher sugar recovery. This success demonstrates the potential of the PQNK approach.
3. **Cost-Effective and Sustainable Solution:** Seed reduction from 120 mounds (5,000 kg) to 4 mounds (160 kg), companion cropping covering operational costs, minimal fertiliser usage for 1st few crops, no need for pesticides or weedicides, and an 80% reduction in water usage due to mulch covering contribute to a cost-effective and sustainable solution.
4. **Operational Efficiency for Mills:** Mechanisation of harvesting synchronizes operations, increasing sugar recovery by an additional 2%. Mills can operate for an extended period, with proper management, up to 9 months in a year. The required sugarcane can be sourced from within a close radius, reducing transportation costs.
5. **Significant Reduction in Transportation Costs:** With an 18,000-acre sugarcane requirement within a 10 km radius, transportation costs are significantly reduced, contributing to overall operational efficiency.
6. **Multi-Ratoon Crop Benefits:** One plantation on PQNK supports at least 8 ratoon crops, ensuring sustained productivity over an extended period.

In summary, the adoption of PQNK principles in sugarcane production presents a transformative solution for the sugar industry. This approach not only increases yield and sugar recovery but also addresses operational and environmental challenges, offering a sustainable and cost-effective pathway forward.

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PQNK Revolution: Transforming Cotton Cultivation for Sustainable High-Yield, Pesticide-Free, and Contaminant-Free Production

Description	Impact
The production of cotton in Pakistan has witnessed four significant turning points, with the introduction of Deltapine in 1974, NIAB-78 in the following years, bollworm- resistant seed in 1995, and the introduction of the PQNK process in 2013. PQNK has revolutionised global farming practices, with cotton now being cultivated without any purchased inputs. A growing number of farmers in Pakistan and beyond are adopting the PQNK process for cotton production.	1. **Nature-Based Cotton Cultivation:** PQNK, based on nature-centric principles, has transformed the understanding and execution of cotton farming worldwide. The process emphasises sustainable, input- free cotton cultivation. 2. **Multiple Benefits:** Adoption of PQNK has resulted in higher cotton production, minimised impacts from weather changes and extreme weather conditions, reduced water usage up to 80%, and the elimination of the need for fertiliser after the initial months of transitioning to the PQNK process. 3. **Pesticide-Free Cultivation:** PQNK enables pesticide-free cotton cultivation by naturally controlling caterpillars, sucking insects, mites, and whitefly. This approach minimises flower dropping and shedding. 4. **Clean Harvest and Quality:** PQNK ensures a clean harvest with no damage to lint and cottonseed. The resulting cotton production is 'Natural', surpassing organic standards and commanding prices at least twice that of standard cotton. 5. **Contamination-Free Products:** PQNK cultivation prevents contamination of poisons in lint and oil extracted from cottonseed, resulting in a pure and chemical-free final product. In summary, the adoption of the PQNK process represents a groundbreaking approach to cotton cultivation, emphasising sustainability, reduced environmental impact, and high-quality, contaminant-free cotton products. The multiple benefits of this process make it a transformative advancement in the field of cotton production.

Cotton fields, no agrochemicals applied

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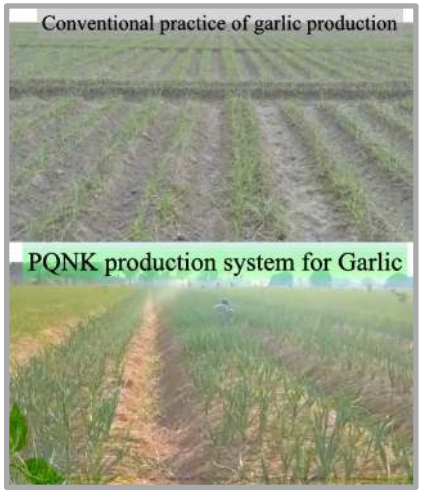
Revolutionising Garlic and Onion Cultivation: PQNK System for Increased Efficiency, Quality, and Profitability

Description	Impact
Garlic and onion are regularly imported due to cultivation challenges such as a decreasing cultivation area caused by a shortage of labour for manual hoeing. The conventional method involves planting cloves on a flat surface or small ridges, as depicted in the top-right picture. The introduction of the PQNK production system for garlic and onion has significantly transformed production, leading to a substantial reduction in imports.	1. **Increased Clove Planting:** The PQNK system allows for at least four times more cloves to be planted on raised beds per acre, optimizing the use of available space. 2. **Mulching and Water Management:** After placing the cloves, beds are covered with thick organic mulch. Water is sparingly applied through the furrows in dry soil conditions, promoting healthy plant growth. 3. **Minimal Intervention:** Up to 300 mounds (12,000 kg) per acre of Dessi white or pink variety can be produced without the need for further interventions. No fertilisers, weedicides, fungicides, or pesticides are required, nor hoeing. 4. **High-Quality Produce:** The resulting garlic and onion are of high quality, with less water content, minimal weight loss during storage, and a long storage life without significant deterioration keeping up the high quality. 5. **Natural and Profitable Production:** The produce meets the standards of natural production, equivalent to organic plus. The profit per acre for a six-month crop, when calculated at a yield of 250 mounds (10,000 kg), exceeds a million rupees, even when sold at the minimum wholesale price of Rs.100 per kg. In summary, the implementation of the PQNK system for garlic and onion cultivation brings about increased efficiency, reduced reliance on imports, and the production of high-quality, profitable yields, aligning with natural and organic standards.



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PQNK Precision: Transforming Small Seed Cultivation for Enhanced Productivity, Quality, and Sustainability

Description	Impact
Handling small seeds for crops like carrots, radishes, rapeseed, and similar ones poses challenges for farmers who resort to hand dribbling or broadcasting. Both methods result in difficulties maintaining plant-to-plant distance, leading to increased seed quantity, higher costs, and lower quality. Conventional carrot production exemplifies this, with less than 20% graded as A, and the majority falling into lower grades, often poorly shaped. High plant population, excessive irrigation, and agrochemical application further contribute to poor quality and shelf life.	1. **Optimized Planting with PQNK:** Carrot and radish planting with PQNK method and planter plant at 8" row-to-row and 6" plant-to-plant distance, achieving an average of 100,000 plants per acre. Radishes are ready for harvest in 45 days, whilst carrots take about 65 days. PQNK enables multiple crops per acre annually, with some farmers harvesting six carrot crops and eight radish crops from one acre each year. 2. **Minimal Input Requirements:** The PQNK process requires only precision seeding, eliminating the need for additional inputs. This system enhances farmers' profitability, ensuring a year-round supply without long storage periods. 3. **Quality and Sustainability:** PQNK quality is organic-plus, as no agrochemicals are applied. The produce is poison-free and nutrition-dense, aligning with sustainable agricultural practices. In summary, the adoption of the PQNK process for carrot and radish cultivation not only optimizes planting methods, increases productivity, and improves profitability but also ensures high-quality, poison-free, and nutrition-dense produce.

Commercial production of Reddish on PQNK

Broad acre production of Carrots

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Revitalising Orchards: A Journey from Decline to Triumph Through Sustainable PQNK Practices

Description	Impact
The overall decline of orchards, specifically Citrus and Mango, is attributed to detrimental industrial agricultural practices that disrupt the natural ecosystem. This has led to a substantial increase in the cost of production, accompanied by low yield and compromised quality. Over the past 30 years, the nutrition density, particularly in kinnow, has witnessed a significant decline of 60%. Many farmers have been forced to uproot their orchards due to persistent losses and the presence of plants on deathrow. A comprehensive program, aimed at restoring orchards, on the brink of decline was initiated several years ago, yielding remarkable results. The numerous testimonials, available in both text and video formats on our YouTube channel and Facebook page, attest to the success of this restoration effort. Videos showcasing the transformation are available below for quick reference.	1. The degradation of soil is primarily caused by practices such as soil inundation, excessive tillage, and leaving the soil bare. The use of a spring tine cultivator has contributed to the development of hardpan in the soil, causing smearing action that restricts water infiltration and hampers root growth. 2. The Sujjahabad Mango Research Station faced the imminent demise of its mango orchard. However, through the adoption of the PQNK method, the orchard was successfully rejuvenated in just a few months. A visual representation of this remarkable recovery is depicted in the accompanying image below. Visit report

Haji Ramzan - Bhakar

Mango orchard on death row, recovered within just nine months with PQNK - Mango Research Station Sujjahabad reports

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Maximizing Tropical Crop Potential: The PQNK Method's Holistic Impact on Papaya, Banana and HD Guava Cultivation and others

Description	Impact
Papaya, a tropical plant indigenous to Central America and Mexico, thrives in warm, humid climates, with an optimal temperature range of 21-32°C. While papaya plants can endure temperatures up to 38°C, extremes either too hot or too cold hamper fruit production. High humidity, ideally between 60-80%, is essential; insufficient humidity leads to curled leaves and reduced fruit yield. Implementing the PQNK method allows for the maintenance of 600 papaya plants per acre, each yielding an average of 50 fruits weighing 0.62 kg. Assuming a conservative minimum selling price of Rs. 50 per kg, this translates to a substantial gross income of Rs. 1,000,000 a testament to the economic viability and sustainability of the PQNK approach. Additionally, the successful introduction of HD Guava on PQNK a decade ago has now become a standard practice. PQNK practices have effectively addressed the significant issue of guava fruitfulness, showcasing the method's comprehensive impact on various tropical crops.	Conventionally, papaya cultivation entails a high cost, exceeding Rs. 200,000 per acre annually. The innovative PQNK method eliminates the need for purchased inputs, such as cultivation tools, fertilisers, pesticides, weedicides, and fungicides. Moreover, the used mulch keeping the soil temperature moderate and slowly irrigating the plants results in a remarkable 90% reduction in water usage. **PQNK has solved fruit-fly and other pests issue on all crops and fruit orchards.** • Papaya is the most difficult plant, that needs lots of nutrition and plant protection. Conventional farmers spend 200,000 per acre per year. • PQNK crop is more yielding without production costs. • PQNK has made banana crop successful in most regions.

Soil temperature, crucial for plants, is analogous to body temperature for humans. Organic mulch has effectively boosted the success of tropical crops, even in cooler hilly areas compared to Sind and South Punjab.

Banana on PQNK near Nainital; a Hill station in India

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Revolutionising Crop Production with the PQNK Process: Innovations and Sustainable Practices

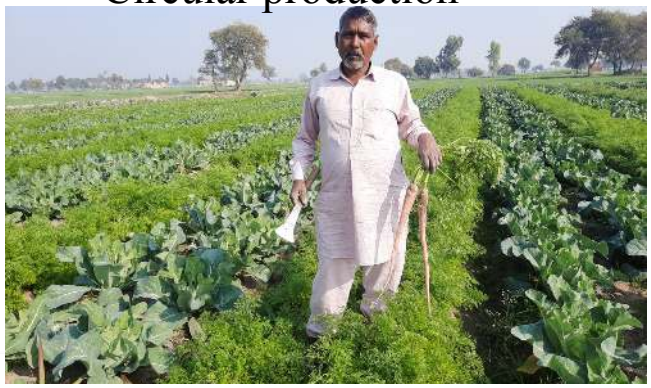
Description	Impact
Crop zoning, companion cropping, circular production, and vertical farming in open fields have seen significant advancements through the development and testing of a comprehensive production process under the PQNK umbrella. Numerous farmers are already reaping the benefits.	1. **Companion Cropping:** Diverse crop combinations have been devised to enhance profitability and support super crops, such as sugarcane with rapeseed, and sugarcane with wheat. This strategy optimises cost-sharing while increasing overall production. 2. **Crop Zoning:** Traditional zoning practices, like reserving specific areas for different crops, are being redefined under the PQNK process. In a video on this page, successful cultivation of cotton and sugarcane in alternate rows is showcased, challenging the conventional, by law enforced norms. PQNK emphasises effective crop growth when soil is covered with organic mulch, moderating temperature, and reducing water loss. 3. **Circular Production:** This method ensures maximum productivity from every inch of soil every minute, enabling successive crops and intercropping through the PQNK approach. 4. **Vertical Production:** Initially employed for space-saving in tunnels and greenhouses, PQNK has extended the benefits of vertical production to open fields, maximizing efficiency in cultivation practices at lowest cost of production; no agrochemicals applied.

Sugarcane and Canola

Cotton & Sugarcane

Vertical Farming

Circular production



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Transforming Livestock Farming: Sustainable Innovations in Pakistan's Dairy Sector with PQNK

Description	Impact
Pakistan's livestock industry, a significant contributor to milk and meat production, primarily involves landless peasants and smallholders seeking additional income. Native animal breeds with great potential are often neglected, leading to less productive herds through mixed breeding with imported semen. Conventional fodder and feed production methods result in low productivity and nutritional content, pushing farmers to resort to costly concentrated feeds (over 70% of the feeding cost relative to the milk value). The commercial dairy sector, while extensive, is not highly profitable and is often used as a tax haven. Traditional practices limit fodder production to feeding 3 to 4 animals per acre.	**Interventions and Impact:** 1. Introduction of Hay & Silage machines in 1984 alongside combine harvesters. 2. Introduction of new fodder varieties and improved seeds in collaboration with other companies. 3. Adoption of PQNK techniques has revolutionized fodder cultivation. 4. Cost of feeding animals reduced from 70% to less than 20%, surpassing the international standard of 27%. 5. Introduction of Napier grass, when grown using PQNK, has increased productivity, cuts per year, and nutritional density, eliminating the need for concentrated feed. 6. Alfalfa, cultivated with PQNK, exhibits improved height, productivity, and nutritional content. 7. Education programs for farmers on maximizing output with PQNK. 8. Under development of low-cost processing machines for cutting, conditioning, and palletizing. 9. Successful farmers are now exporting fodder and its variant products.

Mover Conditioner for Alfalfa

Fodder cutting machine

Napier grass

Alfalfa

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Peanut Revolution: Enhancing Edible Oil Self-Sufficiency Through PQNK Innovation

Description	Interventions and Impact
The import of edible oils remains a significant concern, particularly due to challenges faced by oilseed crops in short spring and autumn seasons. Crops struggle to ripen adequately due to factors like premature heat and limited sunlight during cold days. Despite 40 years of efforts to meet the demand, conventional methods have fallen short. Historically, cotton seed oil and peanut oil were sufficient, but increased population and a decline in cotton and peanut production have created a demand-supply gap.	In 1988, our initial intervention introduced planting and harvesting machines imported from the US. While crops grew well, low organic matter hindered harvesting, leading to the abandonment of the initiative. The development of PQNK provided deep insights into soil systems, emphasising the importance of soil fertility for rapid recovery, water infiltration, retention, and increased organic matter for improved harvests. Numerous successful farmers and the Arid University's demo plantations following PQNK principles showcase tangible successes. Encouraging farmers from various areas to grow peanuts has proven profitable, especially at current rates. A successful initiative in Shakargarh, highlighted in a video from a local farmer, demonstrates the potential for peanut cultivation. Peanut emerges as a major crop to substitute edible oil imports, contributing to self-sufficiency. As a self-funded and non-commercial entity, our primary role is developing solutions, ensuring farmer success, and educating through multimedia, farm visits, and active online coaching. The responsibility for further extension lies with the agricultural extension services.

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PQNK Transformations: Enhancing Crop Quality, Yield, and Market Value in Pakistan

Description

Chillies: The export of red dried chillies from Pakistan faced a decline, dropping from Rs. 1.127 billion (2003-2004) to Rs. 846 million after aflatoxin detection by European Union food authorities. Aflatoxin presence is linked to improper production processes, necessitating the use of agrochemicals and excessive irrigation. The introduction of PQNK in the Umerkot area is gaining momentum, transforming chillies' production. The showcase project at Mr. Bhom Sing's farm has encouraged farmers with exporters paying more for PQNK produce, reducing production costs and increasing yields.

Tomato: Price fluctuations due to seasonal variations have been a challenge for tomato production. PQNK has made year-round cultivation feasible as tomatoes are now grown as perennial plants.

Ginger: Traditionally reliant on imports, a ginger production project initiated a decade ago, starting humbly in a home garden, has become a resounding success through PQNK practices. Numerous farmers have adopted these practices, leading to expansion.

Grapes: Farmers faced challenges in grape production due to pests, diseases, and nutrition deficiencies, leading to increased production costs and poor quality. PQNK has effectively addressed these issues, resulting in improved grape quality and a reduction in production costs.

Medicinal Plants: The cultivation of medicinal plants, including saffron, has thrived under the PQNK umbrella, showcasing successful growth and productivity.

Chillies

Tomato on PQNK

PQNK made grapes crop successful

Ginger production on PQNK

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One Acre Prosperity: Empowering Smallholder Farmers for Sustainable Agriculture and Youth Retention

Description

The average landholding in Pakistan, at 5.6 acres per family, is decreasing over time due to the division of large holdings as per inheritance laws, resulting in 90% of farmers categorised as smallholders (owning less than 12.5 acres), as per IFAD.

This trend is unsustainable under conventional/industrial production systems and ongoing crop rotations, leading to rural-to-urban migration and congested major cities.

The One Acre Prosperity (OAP) Model is developed to address the sustainability challenges, generating over a million Rs. per acre per year (100,000 Rs. per month). Landless youth can engage in the OAP business by leasing land or working with owner farmers on profit-sharing.

Successful OAP stories, available in video format on this page, highlight the model's effectiveness.

A detailed spreadsheet showcasing the economic viability of the OAP Model is provided, supplemented by comprehensive lectures on YouTube and Facebook.

OAP serves as a strategic approach to engage the nearly 60% youth population in Pakistan, contributing to both individual economic well-being and national prosperity.

Multi-fruit-plants & Income estimate per acre

Item	Plants/Ac	Yield/Plant	Yield/Ac	Prc/Kg	Income/Ac
Date palm	80	20	1,600	130	208,000
Citrus	160	20	3,200	100	320,000
Mango	320	20	6,400	100	640,000
Guava	320	20	6,400	50	320,000
Total fruit plants	880				1,488,000
Ginger/Tomato etc.					100,000
Field crops est/avg					100,000
G. Total:					1,688,000

Note: 1) Creepers will bring extra profits 2) if OAP model for high value low volume crops is adopted on 24 beds reserved for field crops, profit will further increase 3) canopy management of fruit plants is a must for better yields.

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Harnessing PQNK for Sustainable Water Management: Mitigating Floods and Replenishing Aquifers

Description	Impact
The absence of upstream dams, inadequate embankments, and rivers lacking proper lining lead to annual monsoon floods, causing significant damage to habitats, lives, and crops. PQNK emerges as a cost-effective solution to effectively manage these challenges, addressing issues related to floods, soil degradation, water scarcity, and weather-related problems.	**Interventions and Impact:** 1. Unethical and unscientific machinery use has led to hardpan formation, restricting water infiltration and alarming depletion of aquifers. 2. Mountain water, when reaching flatland areas, loses intensity. However, rainwater, unable to be absorbed due to hardpan, combines with the mountain water, amplifying the flood risk. 3. Breaking hardpan through PQNK allows immediate water infiltration, mitigating the issues of water runoff and evaporation. 4. PQNK presents a simple and low-cost solution to counter erratic weather patterns, water scarcity, and aquifer replenishment. 5. In the 2020 floods, PQNK crops were saved from water damages, as evidenced in a video report from a farmer in Sindh. 6. Visual references, including a picture illustrating water runoff and videos demonstrating the breaking of hardpan, are provided for quick reference. 7. Lodging reduces yield by up to 30%. It is due to small roots development resulted by excessive water, especially, near to roots and the hardpan


Breaking Hardpan


PQNK vs Conventional

Water runoff


Aftereffects of 2022 floods

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PQNK: A Water-Saving Revolution in Agriculture

Crop Water used under conventional flood irrigation vs Soil Moisture Management (SMM)										
Crop	Crop Water Requirement Flood Irrigation			Avg. crop yield and Lit of water used per Kg of the crop		Soil Moisture Management (SMM) Mulch covered Raised Bed				
Water Req.	Acre Inches	Cubic Meters	Liters	Avg. Yield Kg per Acre	Liters of water per Kg crop	Irrigations	Liters per Irrigation	Crop life Liters	Liters of water per Kg crop	Percent of water used
Wheat	16.00	1,645	1,644,800	1,400	1,175	3	102,790	308,370	220	19%
Cotton	22.00	2,262	2,261,600	800	2,827	5	102,790	513,950	642	23%
Corn Autumn	13.00	1,336	1,336,400	2,400	557	3	102,790	308,370	128	23%
Corn Spring	20.00	2,056	2,056,000	3,200	643	4	102,790	411,160	128	20%
Potato	13.00	1,336	1,336,400	12,000	111	3	102,790	308,370	26	23%
Sugarcane	64.00	6,579	6,579,200	32,000	206	8	102,790	822,321	26	12%
Rice	64.00	6,579	6,579,200	1,400	4,699	5	102,790	513,950	367	8%

Legend		
1 Acre Inch	= 102.80	Cubic Meters
1 Acre Inch	= 102,800	Liters
Furrows Length in Inches		104,544
Furrows Length in Feet		8,712

Cubic In of water	Lit per Irrigation
60	6,272,640	102,790

Cubic Inch	1
Liters	0.01638705

These are hypothetical calculation. Rain & Dew water absorption and increase in the yield is not taken into consideration

In all cases crop plants use same amount of water. Saving comes from reduction in evaporation losses

From Unscientific Methods to Nature-Based PQNK: Five Levels of Crop Production

Comparative Analysis of Crop Production Methods

Sr.	Methodology	Application	Remarks	Status - stage
1	Orthodox	Resource dependent input application	Majority of resourceless farmers are sustaining because of low living standards by following ACI Ancient Conventional/ Industrial agriculture	Over 70% farmers in Pakistan are left alone to follow combination of ACI practices
2	Conventional/ Industrial	Excessive use of plowing and purchased inorganic inputs	Resourceful farmers follow it, however, due to excessive use of inputs, cost of production is high and profitability low	Less than 30% resourceful farmers in Pakistan and all in other countries follow it.
3	Organic/ Industrial	Excessive use of purchased organic inputs - a new form of industrial agriculture	Health consciousness motivated farmers to produce crops without inorganic agrochemicals, organic inputs are applied for certified organic produce	Only few farmers are venturing in Pakistan. However, many farmers converted to organic in Dev. Countries
4	Optimized	Inorganic/organic input optimisation	Technically sounds farmers and crop production companies are optimising crop production to reduce cost of prod	Professionally advance & PQNK farmers are optimising crop production
5	Natural/PQNK	Crop production from within the functioning ecosystems - no purchased input is applied	PQNK is replica of Natural process of vegetation which relies on natural process of soil fertility. Process is most productive and profitable while produce is high quality, far better than organic	Practitioners of PQNK move from stage 4 to 5 by the second crop in rotation

PQNK is the only science-based agricultural production process, ever developed

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Beyond greed: our call for collaboration to build a food system that nourishes everyone

- Most of the research conducted in the agricultural sector since the 2nd World War was funded. This means its research topics, as well as the outcomes, were directed. As a result, the current form of agricultural science is not a true science. True agricultural science is all about discovering natural algorithms and applying them in production systems within the natural ecosystem.
- Agricultural research was directed towards substituting biology based systems, the systems that have sustained and fed all life forms for over 400 million years, with a chemistry based system. This substitution relied on agrochemicals, and was the reason why input supply companies funded the research; either directly or through institutions. Every action they took was to promote their product sales.
- As a result, the entire system is misdirected. Over the past sixty years, little has been done by Research institutes and Agricultural Universities, except for increasing the potential of seeds for crops to be grown. But, it was used in the augmented production system that the Homo sapiens initiated some 10,000 years ago, but now relying on manmade supports.
- The results of this recent agricultural research are quite evident and extremely devastating, as it has pushed all life forms to the brink of extinction. Our efforts should be to help researchers apply their minds to conduct genuine research that benefits all life forms, not just a few greedy, filthy rich individuals.
- All the major work in the form of PQNK process has been completed, and most of the machines required for mechanising steps within the process have been developed, tested, and are currently being used by a large number of farmers.
- Now, the focus is on large-scale adoption, which can be achieved by involving extension services.

For this, sympathisers should come together to:

1. Establish training farms that showcase action learning and
2. Provide machinery support to farmers for adaptation. Additionally,
3. A food chain for natural, nutrient-dense food should be developed to ensure a low-cost food supply.

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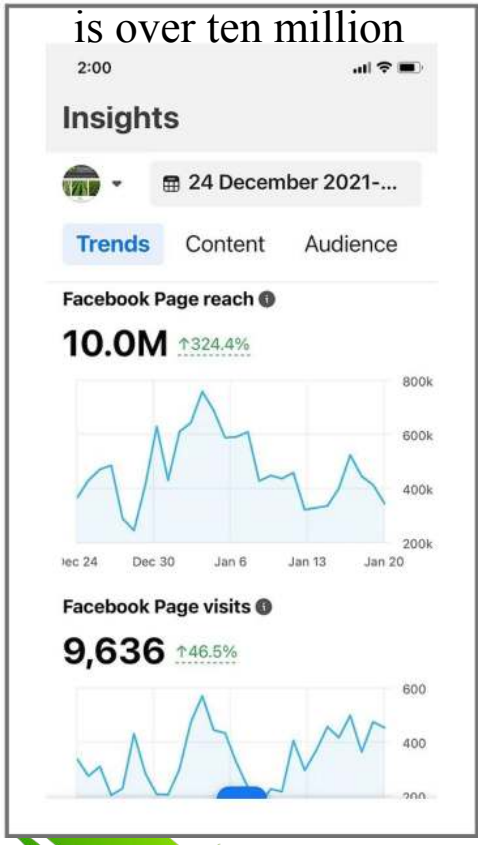
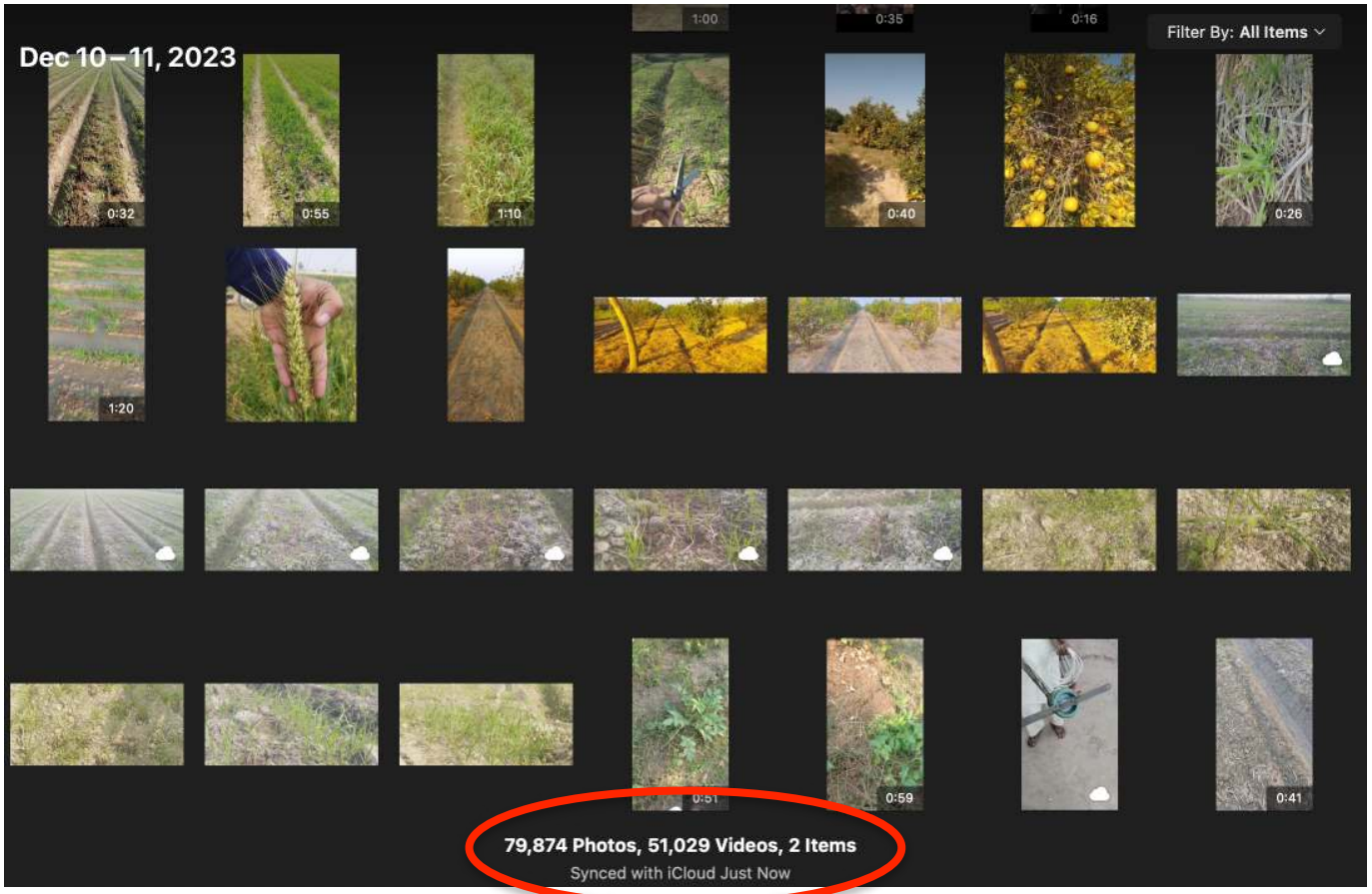
There are 130,000 farmers' testimonies in the form of 80,000 pictures and 50,000 videos in our gallery, in addition to text messages received through email, WhatsApp, YouTube, Twitter, Instagram, and other social media platforms. Outreach to our FaceBook page is over ten million.

Facebook page outreach is over ten million





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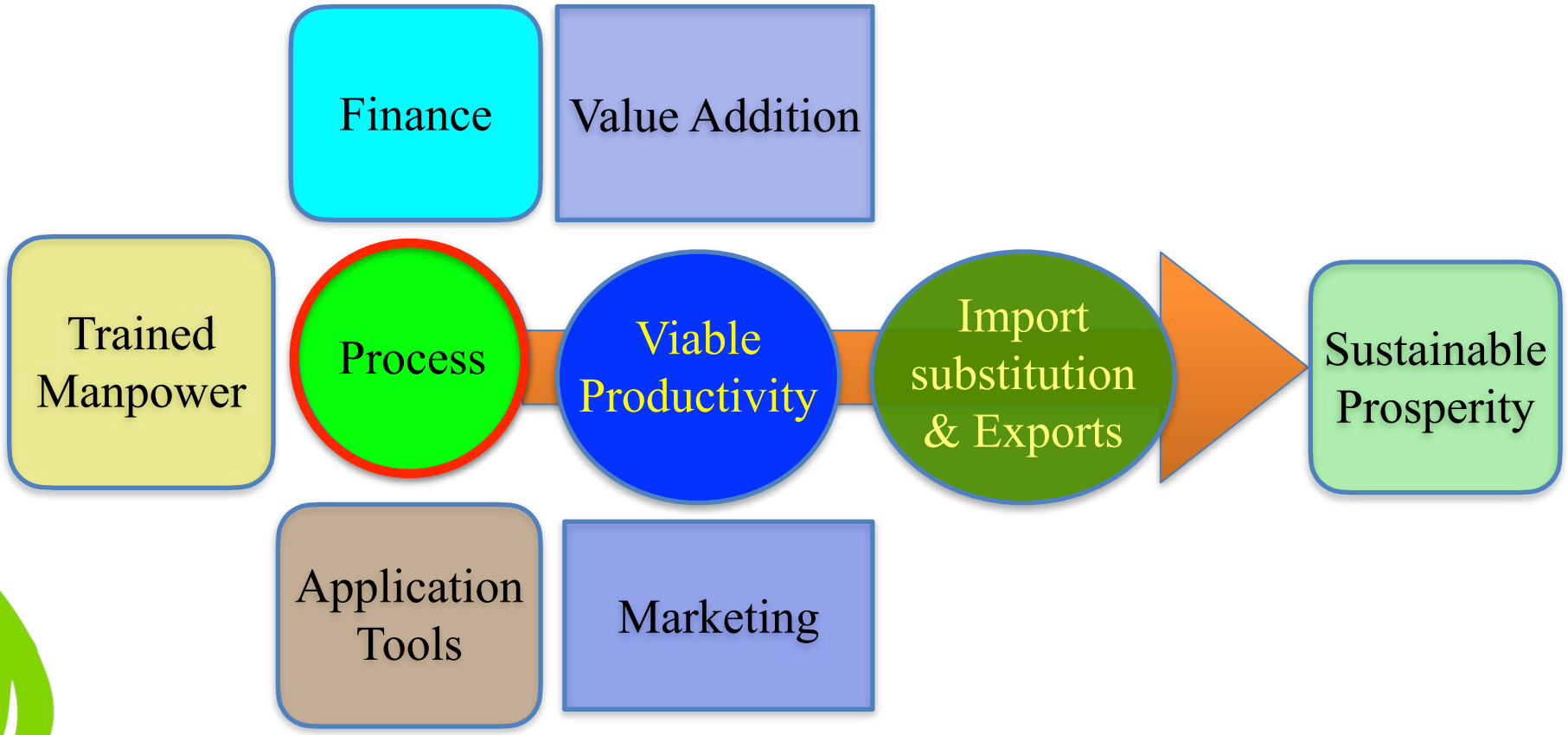
The Crucial Role of Process in Productivity



Effective processes drive productivity in agriculture, impacting soil life for nutrient-dense crops. Strategic resource utilization ensures quality production, earning consumer confidence and market dominance.

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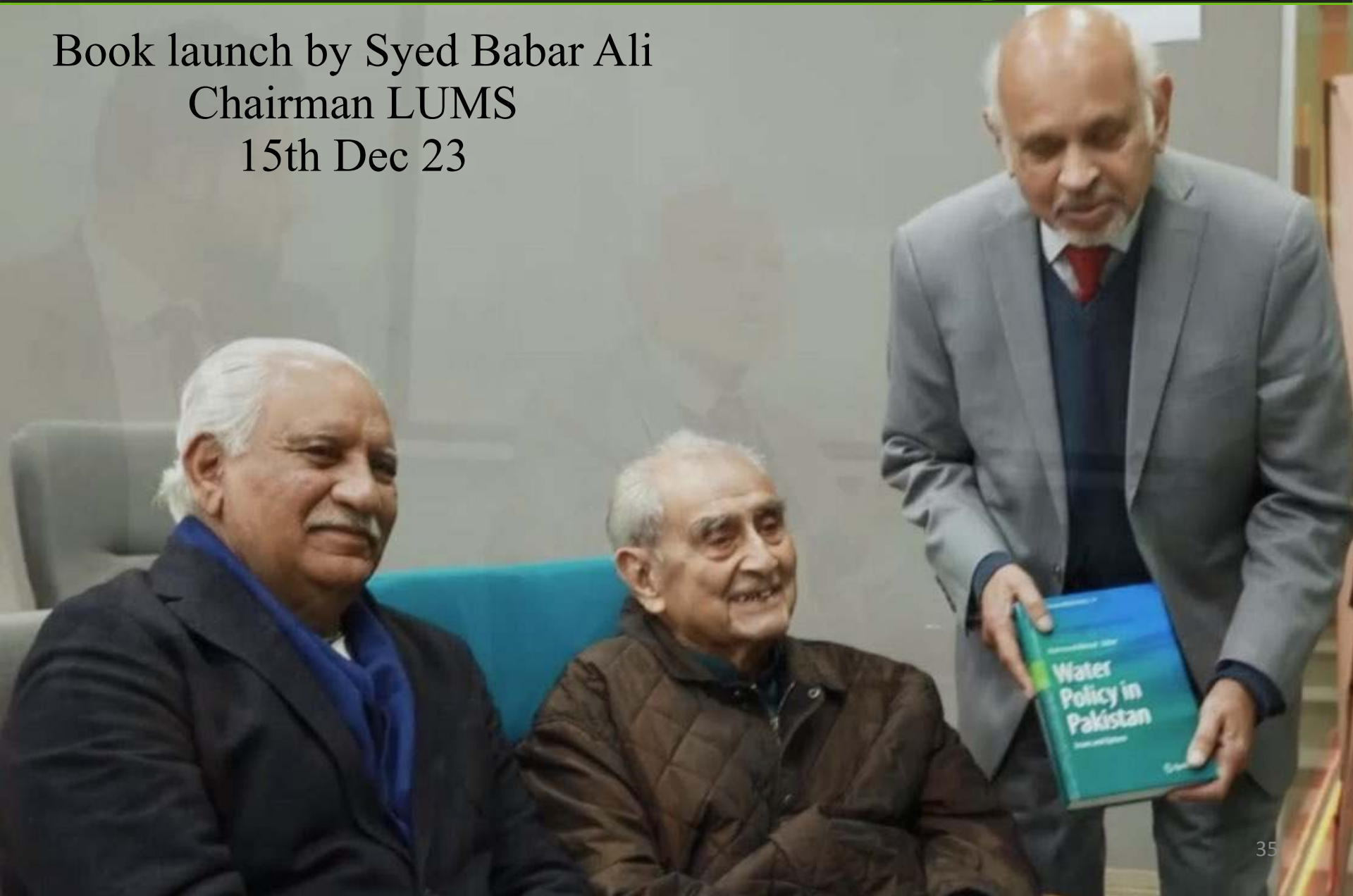
Book launch by Syed Babar Ali Chairman LUMS 15th Dec 23



Abundance of nutritious food

PQNK®

The science of natural farming

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