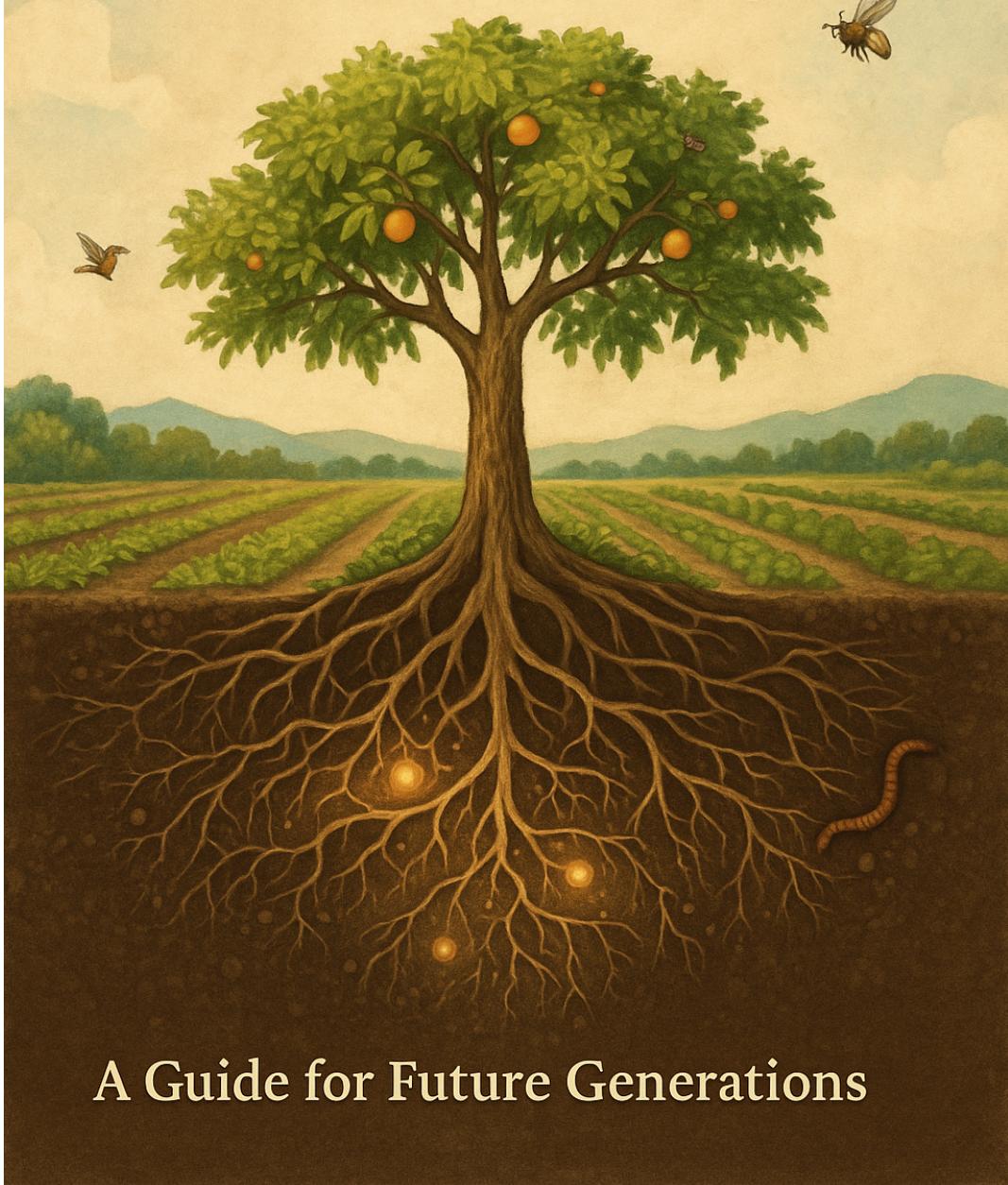




# Roots of Abundance

## The Knowledge of PQNK

(Paedar Qudratti Nizam Kashatqari)



A Guide for Future Generations

**Roots of Abundance: The Knowledge of PQNK (Revised)**

**Paedar Qudratti Nizam Kashatqari – The Pristine Organic Farming System**  
**The Natural Ecosystem Science for Vegetation**

## Preface: A Gift for Future Generations

This book is written not as a manual for one season, nor as advice for one farmer. It is meant as a record of knowledge - a gift from one generation to the next.

For hundreds of millions of years, Earth's design has been clear: abundance is the natural state of life. Food is free, soil is alive, and water flows in balance. Plants cooperate beneath the ground while reaching for sunlight above it. Every life form has its place in the cycle of growth, reproduction, death, and renewal.

Somewhere along the path of human progress, we forgot this truth. We treated soil as dead matter, food as a commodity, and farming as a race for yield at any cost. In doing so, we weakened the very cycles that sustained us.

PQNK - Paedar Qudratti Nizam Kashatqari - is both a reminder and a roadmap. It reminds us of the perennial design that has never failed, and it offers a framework for farming that honors nature while feeding humanity. It is not an invention. It is a return.

The pages that follow weave together science, history, philosophy, and practice. They explain how roots cooperate, how sunlight drives competition, how pruning redirects energy, how water must be balanced in soil pores, and how diversity secures resilience. But they also tell a deeper story: that farming is not about control, but about stewardship. That food was always meant to be abundant. That our role is not to extract, but to care.

To the farmers of today and tomorrow, this book is given as a seed. Plant it in your mind, tend it with curiosity, and let it grow into practice. Share its fruits freely. Pass it on, so that those who come after us remember what we once forgot: the roots of abundance are already beneath our feet.

## Part I – Remembering Nature’s Design

### Chapter 1 – The Ancient Abundance and the 10,000-Year Error

For 400 million years before the first plow touched the ground, food systems flourished without human invention. Forests, grasslands, rivers, and oceans operated on a single, unbroken principle: life creates the conditions conducive to more life. Plants drew their mass from air and water, soil life unlocked minerals, and animals pruned vegetation to keep canopies open and productive. Abundance was the default state of Earth.

The turning point came only 10,000 years ago. Humanity’s first great agricultural error was not planting seeds - it was simplification. Natural ecosystems thrive on diversity and perenniability, but the first farmers tilled, cleared, and mono-cropped. Tillage was a declaration of war on soil biology. It shattered fungal networks, oxidized organic matter, and exposed living ground to erosion and temperature rise.

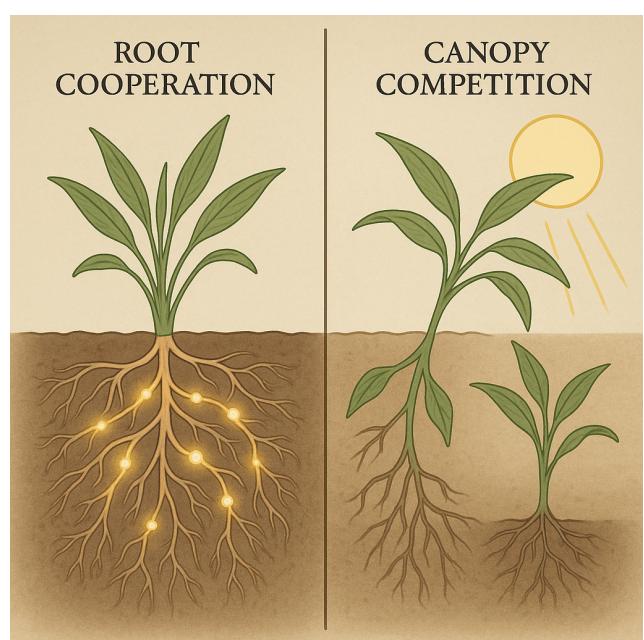
The Industrial Revolution weaponized this ancient error. Synthetic fertilizers bypassed soil biology and created a chemical dependency. Pesticides and herbicides poisoned the very microbial allies plants rely on. Heavy machinery compacted soil into lifeless hardpan. This wasn’t progress. It was simply accelerating collapse.

The consequences - soil loss, broken water cycles, biodiversity collapse, nutrient-deficient food, and debt traps - are not isolated crises. They are symptoms of a single disease: Ancient Conventional Industrial (ACI) Agriculture.

### Chapter 2 – Roots Cooperate, Sunlight Governs

Beneath the soil, roots do not fight. They form alliances. Through mycorrhizal fungi and microbial networks, plants share sugars, water, and minerals. This underground cooperation stabilizes soil, improves infiltration, and builds resilience.

Above the soil, the story shifts. Plants lean, stretch, and twist toward the sun. Light is the one resource no plant can share. This is why forests stratify into layers, and why in fields and orchards, crowding without management quickly becomes self-defeating.



## PQNK accepts this dual truth:

- Below ground, cooperation rules. The denser the root web, the more alive the soil becomes.
- Above ground, management matters. High-density planting works only if plants are spaced, pruned, and oriented to prevent shading.

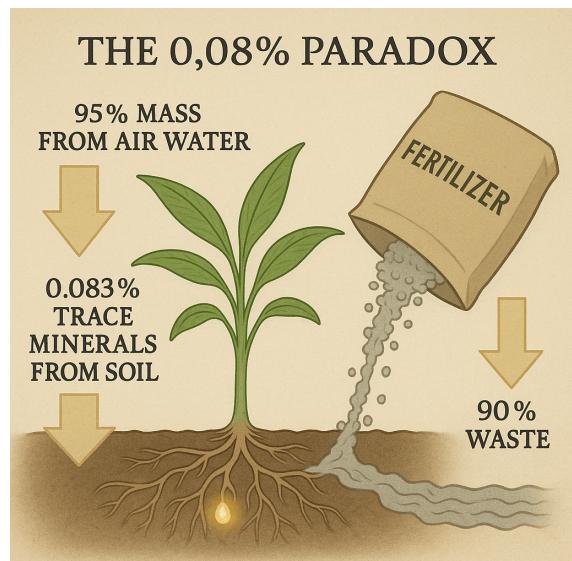
This explains PQNK's emphasis on canopy management and pruning. When plants are kept in their designed space, sunlight reaches every leaf. Energy shifts from endless leaf growth into fruit and seed. In nature, animals achieve this by grazing and browsing. In PQNK, farmers step into that role with intelligent pruning.

The insight is simple but profound: roots weave life together; sunlight sorts winners from losers. PQNK builds on both realities, creating dense underground networks without allowing canopies to collapse into darkness.

## Chapter 3 – The 0.083% Paradox and the Breaking of the Cycle

The greatest myth of ACI agriculture is that plants eat soil. This illusion has fueled decades of fertilizer application and the global input economy. But the science is clear: plants derive over 95% of their mass from the air and water - carbon, hydrogen, and oxygen through photosynthesis. Soil provides only trace minerals, about 0.083% of plant mass.

This is the 0.083% Paradox. Plants require a microscopic fraction of soil minerals, yet the ACI system floods fields with hundreds of kilograms of fertilizer per acre. Worse, over 90% of that fertilizer is wasted - locked up in chemical reactions, leached into rivers, volatilized into the atmosphere, or destroying the very microbes designed to deliver those trace minerals efficiently.



Instead of working with the Perpetual Nutrient Kingdom already present in every soil - an infinite geological bank unlocked by microbes - ACI turned farming into an arms race of inputs. The result: polluted water, greenhouse gas emissions, collapsing nutrient density in food, and farmers trapped in debt.

**The truth is liberating:** plants are already designed for abundance. Air and water provide almost everything. Soil, if left biologically alive, supplies the rest effortlessly. Fertilizer is not just unnecessary; it is ecological sabotage.

This 0.083% figure requires precise understanding to avoid a common misconception. It does not represent the total mineral content of the plant, which is typically around 5% of its dry mass. Instead, it measures the astonishingly small net export of minerals from the soil ecosystem. In a healthy, biologically active soil, plants and microbes engage in a perpetual dance of nutrient exchange. The vast majority of minerals absorbed by roots are continuously recycled back into the soil through fallen leaves, decaying roots, and microbial activity. The 0.083% is merely the tiny fraction permanently sequestered in the plant's long-lasting structure. This reveals the true genius of the system: the geological mineral bank is so vast, and biological recycling so efficient, that the net drawdown is negligible. The "depletion" feared in conventional agriculture is not a failure of supply, but a failure of recycling—a direct consequence of harvesting crops and breaking the biological cycle that nature designed to be perpetual.

Breaking the 10,000-year cycle of degradation means embracing this paradox. Food is not scarce. It was always meant to be free. Scarcity was engineered by a system that mistook cooperation for competition and abundance for deficiency.

**PQNK is the correction - the conscious return to the perennial design that never failed.**

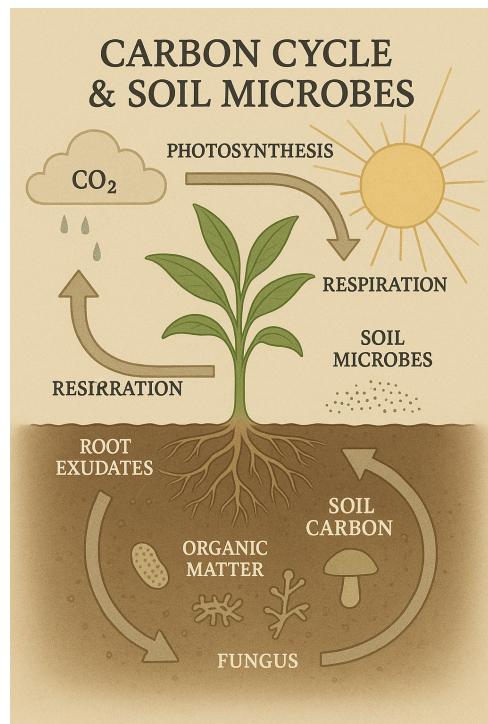
## Part II – The Science of PQNK

### Chapter 4 – Carbon: The Foundation of Life

Every ecosystem on Earth runs on one currency: carbon. Plants capture it from the air through photosynthesis, then spend it underground through root exudates. Up to half of the sugars a plant produces are not kept for itself, but fed into the soil - a deliberate investment in microbial partners.

Soil carbon exists in many forms: fresh mulch, root exudates, living microbes, and highly stable humus. PQNK focuses on building Stable Soil Carbon (SSC) - the dark, spongy fraction that resists decomposition and acts as the bank of fertility.

- Soil carbon feeds microbes. Without it, the microbial workforce collapses.
- Soil carbon builds structure. Glomalin from fungi and sticky polysaccharides from bacteria glue particles into aggregates.
- Soil carbon holds water. Rich soils act like sponges, resisting both flood and drought.



This is why PQNK rejects the obsession with “recycling nutrients” through endless compost or fertilizer application. The true task is to keep carbon flowing from atmosphere to soil, where biology converts it into structure, resilience, and fertility. Every green leaf is a solar panel, and every root is a carbon pump.

## Chapter 5 – Structure Over Texture

Conventional agriculture worships texture - the ratio of sand, silt, and clay. But PQNK makes a radical shift: structure is what matters.

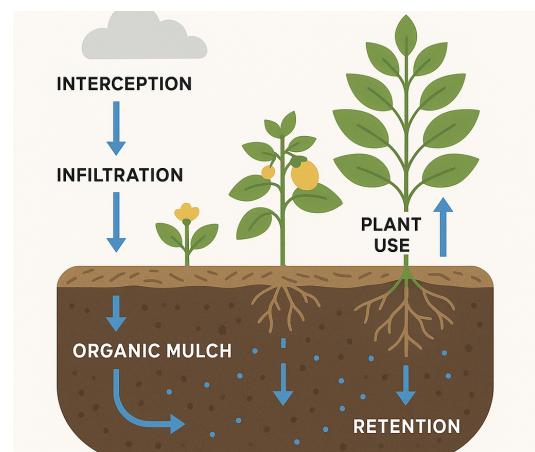
- Texture is DNA. It cannot be changed at human scale. Sandy soils remain sandy, clays remain clay.
- Structure is dynamic. Built by biology, destroyed by disturbance. Aggregates form when fungi stitch particles together, bacteria glue them, and earthworms remix them into stable casts.

### PQNK transforms both sands and clays into fertile loams:

- In sand, microbial glues bind loose grains, adding water retention.
- In clay, breaking the hardpan once allows drainage; then biology creates pores and friability.

Raised beds are non-negotiable. They prevent water inundation, keep pores balanced, and give biology the aerated habitat it requires. Once structure is built, it becomes self-reinforcing: biology builds aggregates, which improve habitat, which supports more biology. This is the soil’s version of compound interest.

The farmer’s role is not to change texture, but to protect and foster structure. In PQNK, every action - no-till, mulch, raised beds, living roots - serves this purpose.



## Chapter 6 – Transition: From Timeline to Function

Regenerative agriculture is often framed as a slow process: “wait three to five years.” PQNK overturns this narrative. Life doesn’t wait for the calendar - it responds instantly when conditions are right.

- Bacteria double in hours.
- Fungal hyphae race across fields in days.
- Earthworms migrate and multiply as soon as habitat is restored.

**The true question is not “how old is the system?” but “is the system functioning yet?”**

**PQNK sets functional benchmarks:**

1. The Fungal Bridge - mycorrhizal networks re-establish mineral and water exchange.
2. Humus Formation - stable organic matter begins to accumulate, holding nutrients.
3. Resistance to Inundation - the soil sponge absorbs heavy rain, drains excess, and stays aerated.

Like making yogurt, once the starter is present and conditions are right, life explodes. The farmer does not wait for years — the system begins in hour one.

## **Chapter 7 – Water: Repairing Earth’s Broken Cycle**

Perhaps the greatest failure of ACI agriculture has been its assault on the water cycle. By removing cover, compacting soils, and creating heat islands, it forced trillions of tons of water out of soil storage into chaotic atmospheric loops.

- Groundwater that once sat 20–30 feet below now sinks to 300 feet.
- Rainfall that once infiltrated now floods, washes away soil and evaporates.
- Local rains that once fell predictably now turn into violent storms hundreds of miles away.

**PQNK restores this broken cycle through four non-negotiable steps:**

1. Break the hardpan once. Shatter compaction so water can infiltrate.
2. Build permanent raised beds. Keep pores open and biology alive.
3. Mulch with cover crops. Moderate temperature, armor the soil, and retain water.
4. Plant continuously with no-till tools. Maintain living roots and soil structure.

When these steps are followed, soil returns to being a sponge: it absorbs heavy rain, holds it in stable pores, and releases it slowly to plants and aquifers. Climate stabilises from the ground up.

**The lesson is stark but hopeful:** agriculture broke the water cycle, but agriculture can also heal it. Every farmer who adopts PQNK participates in repairing not only their land, but the planet’s hydrological balance.

## **Part III – The Philosophy of PQNK**

### **Chapter 8 – Food Was Always Free**

For most of Earth’s history, food was not produced, sold, or bought. It grew in forests, grasslands, and rivers, provided freely by nature’s perennial design. Seeds dispersed by wind, water, and animals ensured abundance without management. Every creature took what it needed, and the cycle continued unbroken.

Scarcity is not a natural condition. It was manufactured. ACI agriculture, with its plows, fertilizers, and pesticides, created artificial dependence on external inputs and global supply chains. Food was no longer a gift; it became a commodity wrapped in debt and scarcity narratives.

**PQNK restores the original truth:** plants already make food for all life forms. Farmers do not “manufacture” food - they simply manage sunlight, water, and space so nature can do its work. The task is to guide, not to force. To prune, not to poison. To protect, not to exploit.

### **Chapter 9 – The Custodian’s Role**

In ACI agriculture, farmers were recast as operators of machines and buyers of inputs. They became dependent, their role reduced to managing debt cycles. PQNK restores dignity and responsibility.

#### **The farmer’s role is that of a custodian of biology and light:**

- To protect soil life by never allowing inundation, tillage, compaction, or poisoning.
- To arrange plants in ways that maximize sunlight and air.
- To maintain carbon flow through living roots and mulch.
- To prune, harvest, and share in the abundance without breaking the cycle.

This custodianship has moral weight. Farmers manage not only crops but the health of communities and the stability of climates. Their fields feed rivers, aquifers, and even the air. Their choices ripple through ecosystems and generations. In PQNK, farming is redefined as stewardship of Earth’s life-support systems.

### **Chapter 10 – PQNK is the Farmacy**

Modern hospitals are overflowing, yet societies grow sicker. Diabetes, heart disease, cancers, and autoimmune disorders climb each year. The medical system treats symptoms, but the root cause is agricultural.

Nutrient dilution - the loss of trace minerals, vitamins, and plant compounds in chemically-grown food - leaves bodies calorie-fed but nutrient-starved. Pesticide residues and chemical

inputs add toxins on top of deficiency. **This is why medicine struggles: it is treating the consequences of broken soil.**

PQNK reconnects soil and health. By restoring soil biology, earthworms, and microbial networks, it restores the Perpetual Nutrient Kingdom that ensures plants contain chromium, zinc, selenium, and hundreds of other compounds in bioavailable form. Earthworms, for example, do not create chromium, but they bio-convert it into a form that regulates human insulin function - a missing link in rising diabetes .

In PQNK, farms are pharmacies. Not the pharmacies of synthetic pills, but of nutrient-dense food that prevents disease before it begins. A tomato grown in PQNK soil is medicine. A wheat kernel grown in PQNK soil carries life. The true health system is agriculture, and the true doctors are farmers.

## **Chapter 11 – Abundance vs. Scarcity: The Ethics of Choice**

The core philosophical battle is not between organic and chemical, or even between tradition and modernity. It is between two worldviews:

- Scarcity as control. The ACI model thrives on dependency - on fertilizer bags, patented seeds, debt, and fragile global trade. It convinces farmers that they cannot farm without it.
- Abundance as freedom. The PQNK model reminds us that nature already provides. With minimal intelligent intervention, abundance emerges, costs collapse, and food becomes free once again.

**Farmers stand at an ethical crossroad:** continue perpetuating scarcity for profit, or embrace abundance for life. Choosing PQNK is not simply an agronomic decision - it is a moral one. It is to side with life, against extraction.

## **Part IV – The Practice of PQNK**

### **Chapter 12 – Designing the Farm**

PQNK starts with a reset. The soil must be healed before it can thrive. This requires three initial steps:

1. **Break the Hardpan (Once Only).** Heavy machinery has compacted soils into cement-like layers that block roots and water. PQNK uses subsoiler once to shatter these barriers. After that, no more tillage is ever needed.

2. **Build Permanent Raised Beds.** These beds lift crops above waterlogging and protect pore structure. They ensure that 30% of soil pores remain water-filled, 70% aerated - the golden ratio for life.
3. **Armor the Soil with Mulch.** Organic cover is not decoration. It moderates temperature, prevents evaporation, buffers soil moisture, and feeds microbes. PQNK mulching follows the “never leave soil naked” law.

Once this foundation is laid, the farm becomes a living sponge and habitat. From here, the farmer can plan seed combinations, canopy orientation, and planting direction to maximize sunlight without shading.

## Chapter 13 – Water Management: The Art of Balance

Water is the most powerful force in agriculture — too little kills, too much kills. ACI systems flood or drain soils, breaking biology. PQNK manages water with precision.

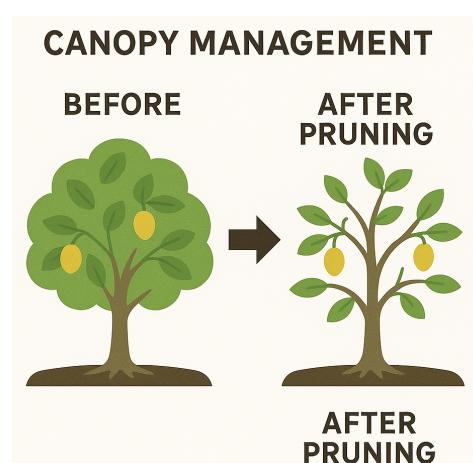
- **Furrow Irrigation.** Beds are flanked by furrows that carry water. The level never rises above half the furrow height, preventing seepage into beds and keeping roots in balance.
- **Mulch as a Regulator.** By shading soil, mulch prevents evaporation, stabilises root-zone temperature, and feeds the soil life.
- **Sponge Effect.** With stable aggregates and pores, PQNK soils absorb intense rainfall, resist floods, and store water for dry spells.

The farmer becomes less dependent on canals, pumps, or rains. The soil itself becomes the reservoir.

## Chapter 14 – Canopy and Pruning Management

Left unchecked, plants chase space and water, producing excessive vegetative growth. This creates hollow space in the canopy, encourages vegetative growth, dilutes nutrients, and wastes energy. PQNK reintroduces a natural discipline: pruning.

- **Spacing and Orientation.** Crops are sown in directions that maximize sunlight, often North - South rows to reduce shading.
- **Pruning.** Like grazers in nature, farmers cut back vegetation at key stages. This redirects energy from leaves to fruit, seed, and root resilience.
- **Canopy Size Control.** Orchard trees are managed to prevent hollow, shaded interiors. Every branch must serve reproduction and productivity.



Pruning is not loss. It is investment. It ensures that the plant fulfills its reproductive potential instead of exhausting itself on excess leaves.

## Chapter 15 – Year-Round Circular Production

In nature, there are no fallows. Something always grows, always covers, always feeds. PQNK designs farms the same way:

1. **Seed Combinations.** Crops are mixed to provide mutual shade, root cooperation, and pest resilience. Weeds are not enemies but signals of what the soil needs.
2. **No-Till Planting Tools.** The SIPP (Slit Insertion Precision Planter) and VIPP (Vertical Insertion Precision Planter) allow seeds to be placed with minimal disturbance, through mulch, directly into living beds.
3. **Continuous Carbon Flow.** Every crop cycle keeps roots alive in the soil, feeding microbes, and every mulch layer adds to the humus bank.
4. **Circular Harvesting.** Farmers don't interrupt nature's cycle - they join it. Each season flows into the next, creating a perpetual loop of life, food, and fertility.

**This is why PQNK calls itself the Perennial Design. It is not seasonal agriculture. It is continuous life agriculture.**

## Part V – PQNK for the Future

### Chapter 16 – Food Security and Climate Resilience

**The 21st century faces a paradox:** record global harvests, yet widespread hunger and malnutrition. Industrial agriculture produces calories but not nutrition, and at a devastating environmental cost. It is brittle - one flood, one drought, one supply chain collapse, and entire regions fall into crisis.

**PQNK turns this fragility into resilience:**

- **Food Security** - By building self-sufficient, biologically-driven farms, PQNK makes every village, every region, less dependent on imports and inputs. Nutrient-dense food is grown locally, at low cost, in continuous cycles.
- **Climate Resilience** - PQNK soils act as sponges, absorbing floods and resisting droughts. Plants grown in living soil resist pests and diseases naturally. Carbon is drawn from the air into the soil, healing climate while feeding crops.

In a PQNK future, no child starves in a land of fertile soil. No farmer is ruined by one erratic season. Food abundance is stable, predictable, and rooted in biology rather than chemistry.

## **Chapter 17 – Restoring the Water Cycle**

Perhaps the greatest gift PQNK offers the planet is the repair of the broken water cycle. Industrial farming has turned fields into heat islands, forcing trillions of tons of water out of soil and into chaotic skies.

**PQNK reverses this with its four-step protocol:**

- Break the hardpan.
- Build raised beds.
- Armor with mulch.
- Maintain continuous living roots.

This transforms farmland into giant natural reservoirs. Rain infiltrates instead of running off. Aquifers recharge instead of collapsing. Local rainfall patterns stabilize instead of spinning into chaos.

The scale of impact is enormous. Fixing soils globally would not only secure agriculture but also cool the planet, reduce extreme weather, and restore rivers and springs. PQNK is not just farming reform. It is climate repair.

## **Chapter 18 – A Message to Future Farmers**

**To those who will inherit this Earth:** farming is not about chemicals, machines, or markets. It is about stewardship.

Your role is simple but profound:

- Keep soil alive.
- Keep water balanced.
- Keep roots in the ground.
- Keep sunlight reaching every leaf.

Do this, and abundance will follow. You will never need to fear scarcity. Food was always free. Scarcity was engineered.

PQNK is your inheritance - a framework proven by nature over 400 million years. Adopt it not as an option, but as a responsibility. Your fields are not just production units; they are part of Earth's climate system, water cycle, and health system. You are custodians of all three.

## **Chapter 19 – The Legacy of PQNK**

Future generations will look back on this century as a turning point. They will judge whether we allowed soils to collapse and climates to spiral, or whether we chose to restore abundance.

### **PQNK offers that choice clearly:**

- Down one path lies dependency, debt, disease, desertification.
- Down the other lies freedom, health, and abundance.

The tools are simple, the science is clear, the economics are undeniable. What remains is the will to act.

The legacy we leave is not measured in profit or yield alone. It is measured in the stability of climates, the health of our children, the resilience of our soils, and the abundance of food on every table.

To embrace PQNK is to choose to be remembered as those who healed the cycle, restored the gift, and passed on a living Earth.

### **Closing Message: A Letter to the Future**

To you who hold this book, whether farmer, student, scientist, or simply a curious mind:

Remember this - food was always free. Life on Earth designed itself for abundance. For four hundred million years, plants, soil, water, and sunlight cooperated to produce more than enough for every creature. Scarcity was never natural. It was manufactured by human error, and amplified into crisis by a system that forgot the wisdom beneath its feet.

### **The choice before us is simple:**

- Continue the broken cycle of extraction, chemical dependency, and collapse.
- Or return to the perennial design, where roots cooperate, soil breathes, water infiltrates, and food nourishes all life.

PQNK is not an invention. It is a remembering. It is the codification of nature's original blueprint - refined into a framework that farmers can practice, communities can sustain, and future generations can inherit.

### **If you take nothing else from these pages, take this:**

- Break compaction once, then never again.
- Protect the soil with mulch.
- Keep roots alive year-round.
- Balance water - neither flood nor drought.

- Let light reach every leaf.
- And above all, trust the intelligence of life.

**You are not just a grower of crops. You are a custodian of Earth's cycles:** carbon, water, and nutrients. The harvest you gather is not only food - it is climate stability, community health, and the inheritance of generations yet unborn.

Let this knowledge live beyond you. Pass it forward, as a seed carried by wind, to grow in fields you will never walk. If we choose abundance, the cycle will never break again.

The soil is ready. The seed is planted. The future is in your hands.

## Glossary

### PQNK

Paedar Qudratti Nizam Kashatqari (pronounced “picnic”). Translates to Pristine Organic Farming System. A regenerative, ecosystem-based framework for food production that restores soil life, water cycles, and nutrient density.

### ACI Agriculture

Ancient Conventional Industrial Agriculture. The 10,000-year-old system of tillage, mono-cropping, and chemical inputs. Identified as the root cause of soil degradation, broken water cycles, and nutrient-deficient food.

### The 0.083% Paradox

The scientific finding that plants derive over 95% of their mass from air and water. Soil contributes less than 0.1% in trace minerals - yet industrial agriculture floods fields with fertilizers to supply this tiny fraction, wasting over 90% of inputs as pollution.

### Perpetual Nutrient Kingdom (PNK)

The geological inheritance of minerals within all soils. Soil is not empty; it contains an infinite “bank” of nutrients locked in rock and sand. Soil biology (fungi, bacteria, earthworms) are the miners that unlock these nutrients.

### Stable Soil Carbon (SSC)

The long-lived fraction of soil carbon (humus) that holds nutrients, water, and air. Built through mulch, root exudates, and microbial metabolism. The true measure of soil fertility.

### Hardpan

A compacted, cement-like soil layer caused by heavy machinery and tillage. It prevents water infiltration and root growth. PQNK requires breaking the hardpan once, then never disturbing soil again.

## Raised Beds

Permanent elevated beds constructed after breaking the hardpan. They prevent inundation, balance pore spaces (30% water-filled, 70% aerated), and provide the ideal habitat for soil biology.

## Mulch / Soil Armor

Organic cover (crop residues, leaves, mulched biomass) left on the soil surface. Functions as temperature regulator, evaporation shield, microbial feedstock, and carbon source. In PQNK, “**never leave soil naked**” is a first principle.

## SIPP / VIPP

Precision no-till planting machines.

- **SIPP:** Slit Insertion Precision Planter, creates a narrow slit for seeds
- **VIPP:** Vertical Insertion Precision Planter, drops seeds vertically with no disturbance

Both plant directly through mulch into living soil.

## Fungal Bridge

The mycorrhizal fungal network that connects plant roots, exchanging water and nutrients. A key functional benchmark of a mature PQNK system.

## Yogurt Principle

Analogy used in PQNK to describe soil life transition. Like milk turning to yogurt once starter culture is added, soil life explodes instantly once conditions (no-till, mulch, living roots) are restored — it doesn’t take years, it starts in hours.

## Inundation Resistance

The ability of soil to absorb heavy rainfall and then drain back to an aerated state. Considered the ultimate benchmark of a functioning PQNK system.

## The Farmacy

PQNK’s concept of farming as the foundation of health. By restoring soil biology and nutrient density, PQNK food becomes preventative medicine, reversing the rise of chronic disease caused by nutrient dilution in ACI agriculture.

## Custodianship

PQNK reframes the role of the farmer. Not as an input manager or debt carrier, but as a custodian of life — protecting soil, balancing water, managing light, and passing abundance forward to future generations.

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