QATUAN SUSTAINABLE DEVELOPMENT NETWORKS

QAT SDN

LIVING intelligence

QAIB

QAIB

FROM SHIT ~ TO SPACESHIP

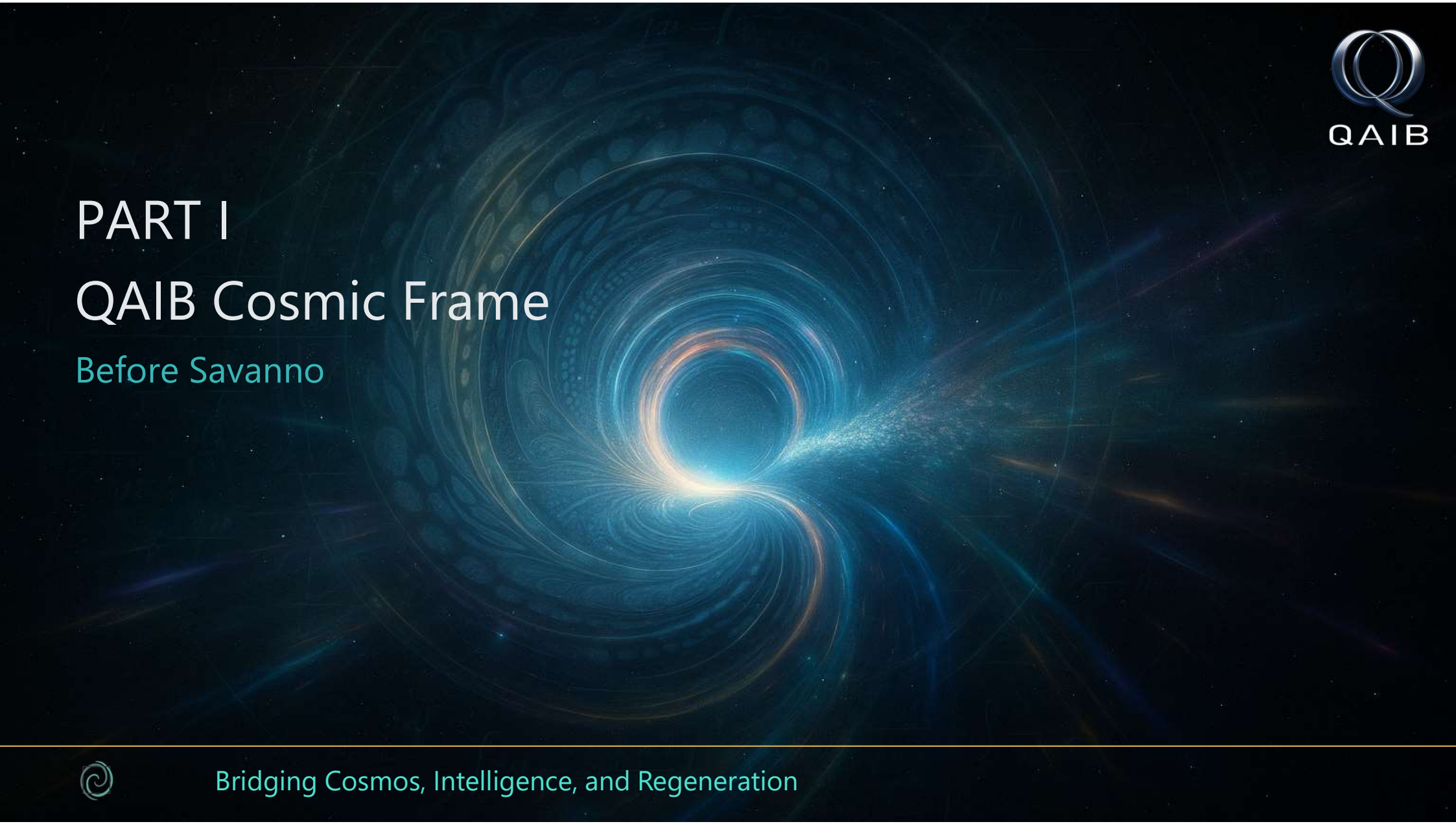
Presented by Andy Jones

Berlin Institute of Architecture

2025

QUANTUM ARCHAEOASTRONOMY INSTITUTE OF BRAZIL

Bridging Cosmos, Intelligence, and Regeneration



PART I
QAIB Cosmic Frame

Before Savanno

HOW A SPACESHIP BREATHES

System Function – A Living Metabolism

A Bioplex is a closed-loop waste-to-energy system — a mechanical metabolism that turns organic waste into heat, gas, and clean water.

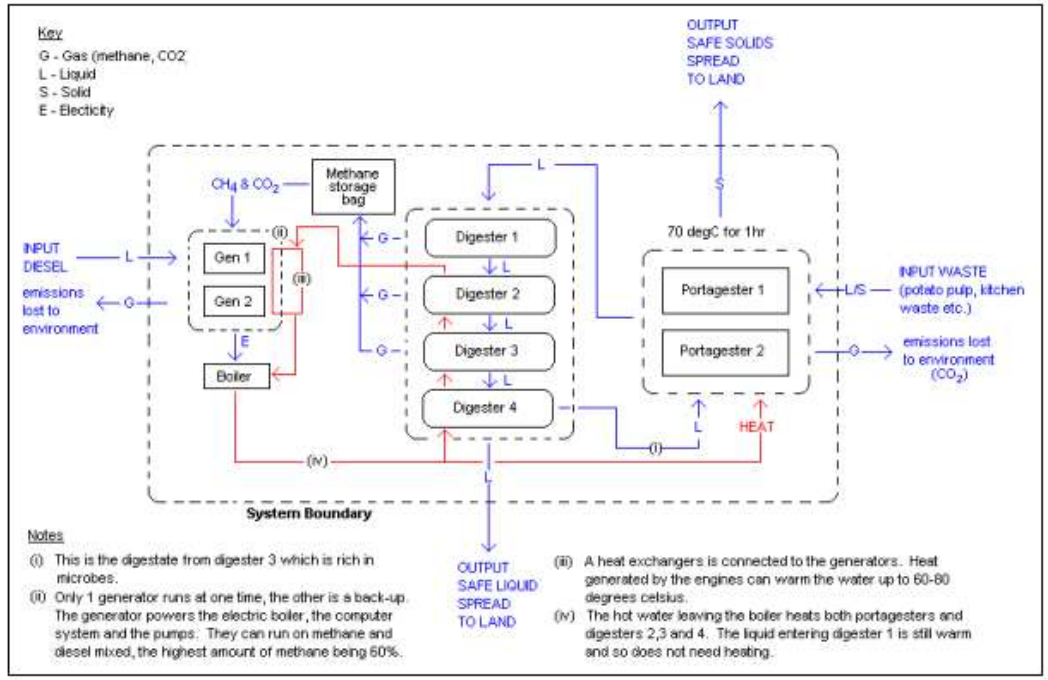
Inside the Bioplex loop, energy and matter cycle through four simple acts — digestion, generation, exchange, and renewal.

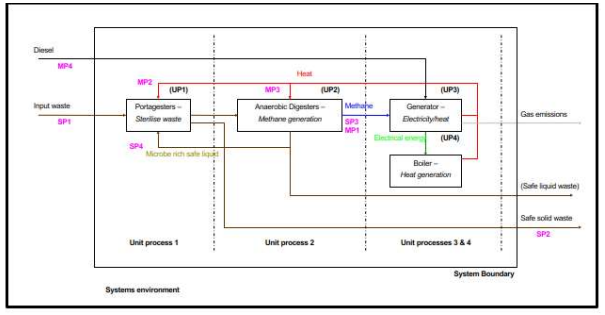
Waste becomes feedstock; microbes convert it into methane; heat and power sustain the biology that created them.

Solids return to soil; water re-enters the landscape.

It's a mechanical echo of a forest, or a body, or a planet.

Feedstock → Portagester/Pre-treat → Digesters → CHP/Heat → Water/Soil → Back to Life.





Engineered Metabolism

Source:

Bioplex Ltd / Durham University, Prototype Trials of Integrated Waste-to-Energy System, 2004.

Figures 6 & 11 adapted for QAIB presentation.

SAME INTELLIGENCE, DIFFERENT BODY

The same closed-loop logic

The logic of the Bioplex doesn't change — only the body that expresses it.

— Carbon, hydrogen, and heat cycling — now re-written in soil and stone.

In place of pipes and catalysts, we use roots, microbes, and gravity.

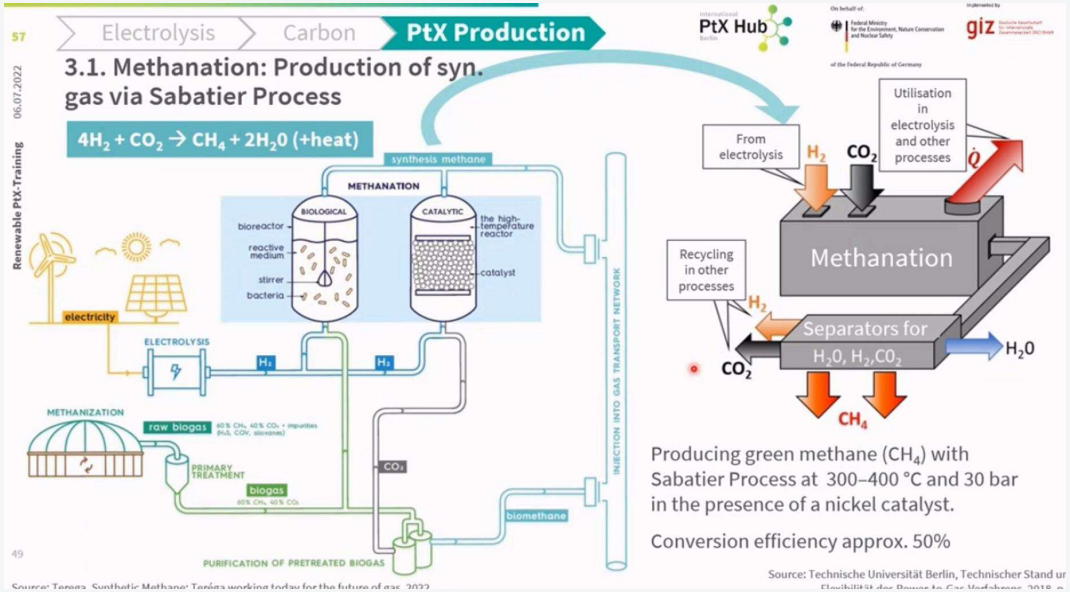
The system still breathes — but with a living lung.

Sources:

Top: PtX Hub "Methanation via Sabatier Process" graphic (source TU Berlin / PtX Hub).

Bottom-left: Compact Experimental reed-bed render (the "living lung").

Affiliation: QAIB / PtX Hub Berlin – International PtX Community 2023



NATURE'S ORIGINAL REACTOR

(540 Million Years of Waste-to-Energy Intelligence)

Before we engineered Bioplex systems in steel and concrete, Nature had already perfected the same metabolism in wetlands.

Long before we called it "waste-to-energy," Nature perfected it. Wetlands, peat bogs, and mangrove estuaries have been cycling carbon and water since the Cambrian Period — transforming decay into life.

The same microbial choreography inspired the pioneering work of Chris Weedon in compact vertical-flow reed-beds, and of David and Jane Shields of Living Water, who demonstrated how water could be guided — not forced — to clean itself.

Their designs didn't just treat wastewater. They revealed water as a living, self-organising reactor — the original Bioplex.

Sources:

Weedon, C. (2016) Establishing a Design for Passive Vertical Flow Constructed Wetlands Treating Small Sewage Discharges, UK.

Shields, D. & Shields, J. (2020) Living Water Systems – Architecture of Flow, UK. Adapted for QAIB presentation (Nature's Reactor lineage).

REGENERATION IN PRACTICE

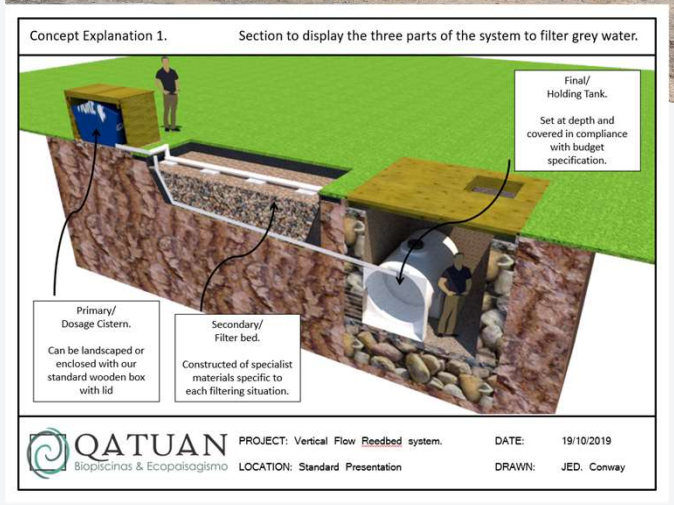
From Laboratory to Landscape

Each site adapts the universal metabolism to its own climate and culture.

What began as experiments in Europe — compact vertical flow beds, living water channels — has now taken root in Brazil through Qatuan's field laboratories.

At Savanno, the same principles of oxygenation, bio-char filtration, and nutrient recycling are re-expressed through local materials and craft.

The goal is not to replicate the technology, but to continue the conversation — between water and place, between people and process.



Sources:

QAIB Field Notes (2024–2025) – Savanno Wastewater System, Goiás, Brazil.

Living Water & Weedon Systems adapted for tropical deployment through Qatuan Architectura Sustentável.

FROM INDUSTRY TO ECOLOGY

Re-linking the Broken Metabolism

The industrial metabolism and the ecological metabolism were never opposites — only separated by design.

Industry burns, isolates, and exhausts.

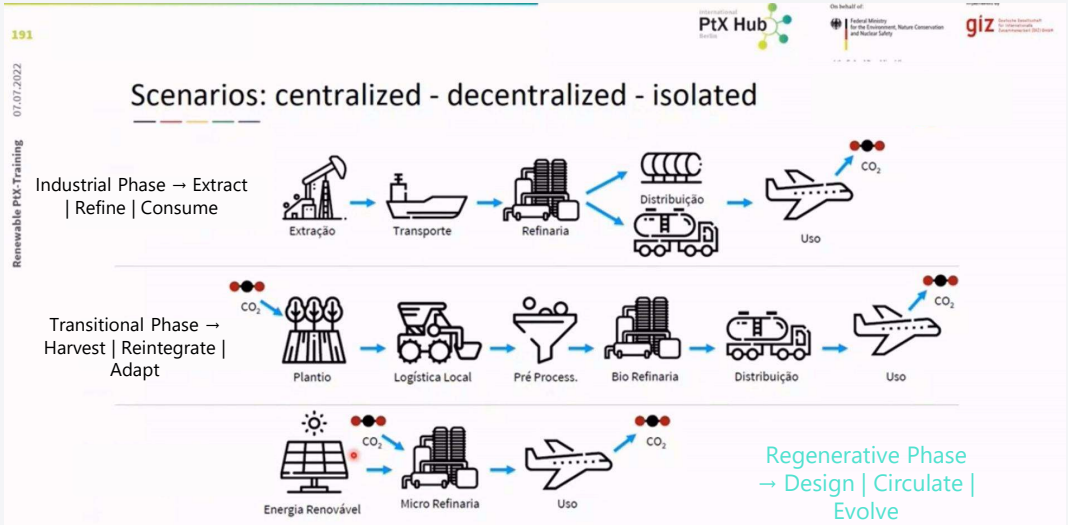
Ecology circulates, integrates, and renews.

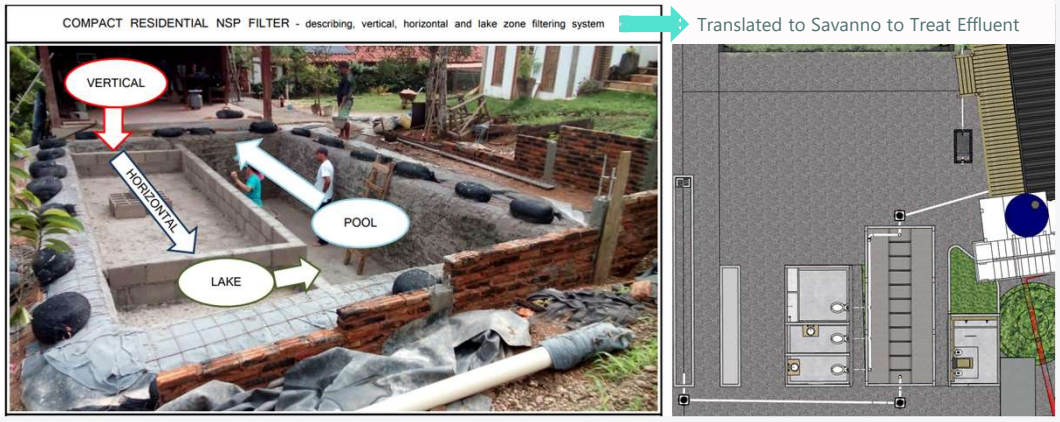
At Qatuan we use the same process logic — feedstock, conversion, reuse — but guided by the intelligence of gravity, carbon, and community.

The result is a metabolic continuum: from synthetic to organic, from extractive to regenerative.

Sources:

Diagrammatic logic adapted from PtX system analysis and circular-economy frameworks. Re-expressed for QAIB / Qatuan field architecture.






QAIB
PART II
Qatuan Systems in Practice
After Savanno
Bridging Cosmos, Intelligence, and Regeneration

SAVANNO WASTEWATER SYSTEM – ARCHITECTURE OF REGENERATION

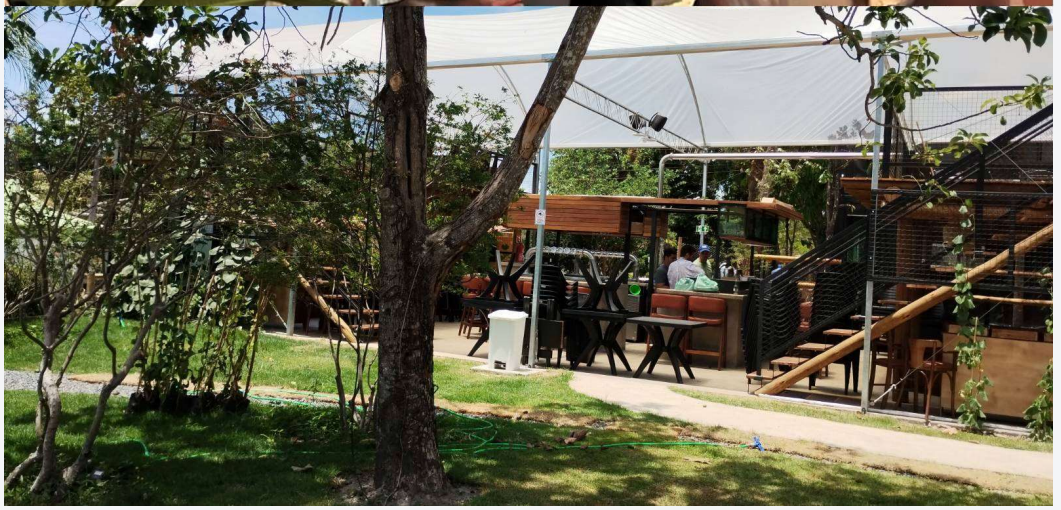
A Case Study in Nature-Based Water Treatment

"Where water becomes architecture, and waste becomes wisdom."

QAIB | Qatuan Sustainable Development Network

WHY WE BUILT IT

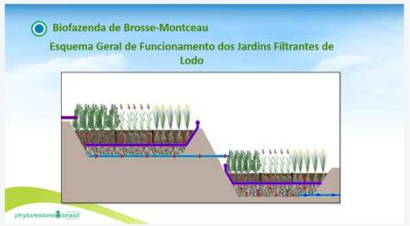
- Savanno Kombucharia & Garden serves as a community gathering space in Cavalcante, Goiás. Brazil.
- The project needed a self-sufficient water system that could manage kitchen, toilet, and washroom effluent without chemicals or power.
- The goal: transform wastewater into clean water, using gravity, plants, and living soil — an educational example for the entire town.
- Every stage was designed to be visible, teachable, and replicable.



WHERE THE SYSTEM BEGAN

- The design lineage traces back to the pioneering work at Sheepdrove Farm — a collaborative project led by Chris Weedon (planning, system design) with Andy Jones contributing to the construction of the reed-beds and designing/implementing the 100 m Flowform® stream.
- In 2019, this training — delivered through Phytorestore Brasil and the Hidrobotânica Ambiental program — introduced living plant systems as Nature-Based Solutions (NbS) for treating effluent.
- These systems purify water through wetland plants and microbial ecosystems — no chemicals, no energy inputs.
- Savanno's solution integrates that lineage with QAIB's[1] field-based regenerative framework, adapting the principles to local materials, climate, and community needs.

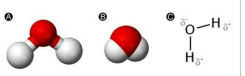
[1] The Quantum Archaeoastronomy Institute of Brazil.



OBSERVING FLOWING FORMS

What is the Structure of water:

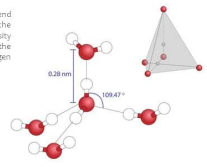
Water is a simple molecule consisting of one oxygen atom bonded to two different hydrogen atoms. Because of the higher **electronegativity** of the oxygen atom, the bonds are polar covalent (**polar bonds**). The oxygen atom attracts the shared electrons of the covalent bonds to a significantly greater extent than the hydrogen atoms. As a result, the oxygen atom acquires a partial negative charge ($\delta-$), while the hydrogen atoms each acquire a partial positive charge ($\delta+$). The molecule adopts a bent structure because of the two lone pairs of electrons on the oxygen atom. The H–O–H bond angle is about 105 degrees.



The water molecule, visualized three different ways: ball-and-stick model, space-filling model, and structural formula with partial charges.

Polar molecules attract one another by dipole-dipole forces, as the positive end of one molecule is attracted to the negative end of the nearby molecule. In the case of water, the highly polar O–H bonds results in very little electron density around the hydrogen atoms. Each hydrogen atom is strongly attracted to the lone-pair electrons on an adjacent oxygen atom. These are called hydrogen bonds and are stronger than conventional dipole-dipole forces.

Because each oxygen atom has two lone pairs, it can make hydrogen bonds to the hydrogen atoms of two separate other molecules. The model to the right shows the result — an approximately tetrahedral geometry around each oxygen atom, consisting of two covalent bonds and two hydrogen bonds.

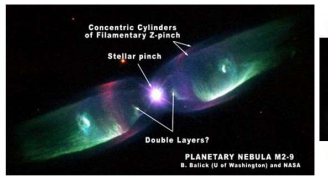


As a result of two covalent bonds and two hydrogen bonds, the geometry around each oxygen atom is approximately tetrahedral.

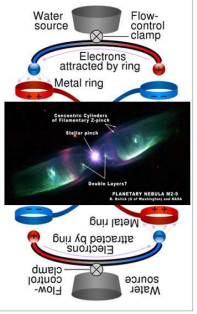
Lorentz Force:

Z-pinch

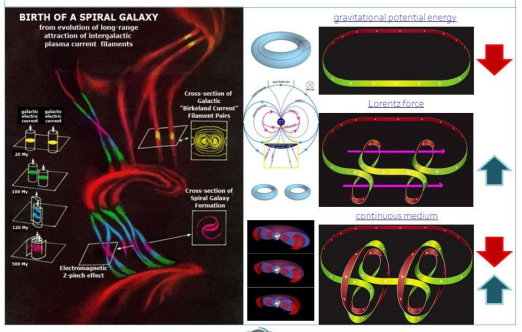
The Z-pinch is an application of the Lorentz force, in which a current-carrying conductor in a magnetic field experiences a force. One example of the Lorentz force is that, if two parallel wires are carrying current in the same direction, the wires will be pulled toward each other.



In a Z-pinch machine the wires are replaced by a plasma, which can be thought of as many current-carrying wires. When a current is run through the plasma, the particles in the plasma are pulled toward each other by the Lorentz force, thus the plasma contracts. The contraction is counteracted by the increasing gas pressure of the plasma.



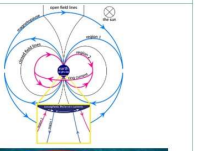
Birkeland Currents

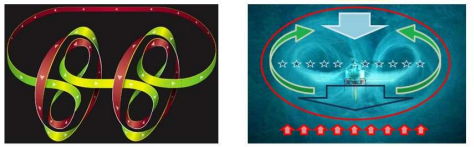


Electro-Magneto-Hydrodynamics (MHD)

Essentially ~ The electromagnetic force becomes self-reproductive in a plasma state.

Both the Sphere and the Torus "act" in unison. Hydrodynamically in terms of the fields that their combined forces create: Fractals upon Fractals through the scales, in a perpetual state of exchange that we don't "see", but experience.

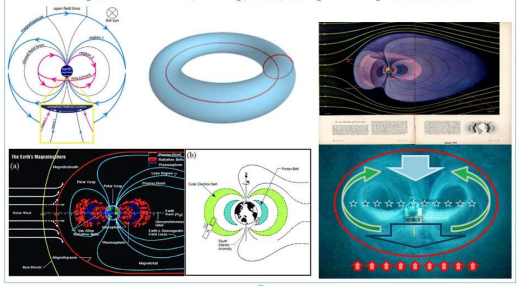




Observation of atomic activity likened at planetary scales – allows the activities of humankind "appear" to act in a similar fashions to sub-atomic particles; Thus, we can accept the form of an Helicopter and it's downdraft to mimic complex energetic realities

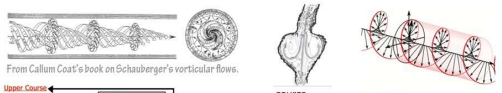
A Very BIG Helicopter, Described in a Plasma State; can EQUALLY be represented as a Very Small Helicopter

Magnetohydrodynamics (MHD, also called magneto-fluid dynamics or hydromagnetics) is a model of electrically conducting fluids that treats all interpenetrating particle species together as a single continuous medium.

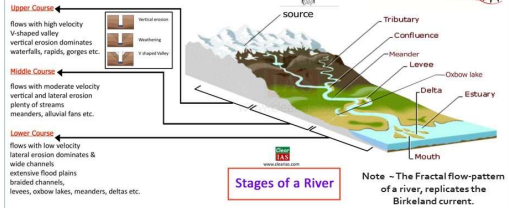


Quantum Theory and Atomic Structure:

Rejuvenation process of a River.



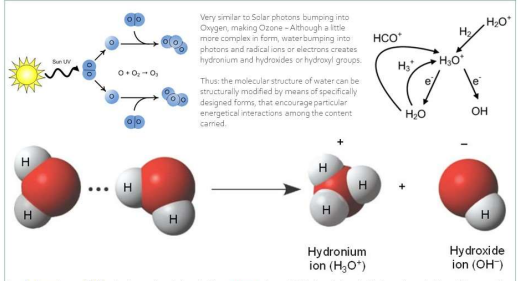
From Callum Coat's book on Schauberger's vortical flows.



Stages of a River

Note ~ The Fractal flow-pattern of a river, replicates the Birkeland current.

What then, is the Structure of "Structured" water:



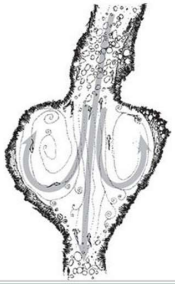
Very similar to Solar photons bumping into Oxygen, making Ozone – Although a little more complex in form, water bumping into photons and radical ions or electrons creates hydronium and hydroxides or hydroxyl groups.

Thus: the molecular structure of water can be structurally modified by means of specifically designed forms, that encourage particular energetical interactions among the content carried.

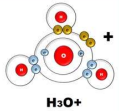
In a **hydroxyl** group (**-OH**), a hydrogen atom is bonded to an **oxygen** atom, which in turn is bonded to the carbon skeleton of the organic molecule. The electronegative **oxygen** atom confers **polar** (and **hydrophilic**) properties to this group. Do not confuse this functional group with the hydroxide ion, **OH⁻**.

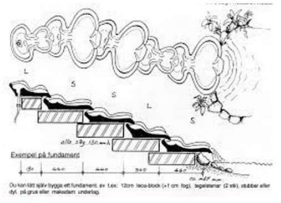
Quantum Theory and Atomic Structure, as an effect of the Quantum Electromagnetic Field:

And that is how water moving through flowing forms, rejuvenates itself as if in a mountain stream.



hydroxyl-hydronium complex





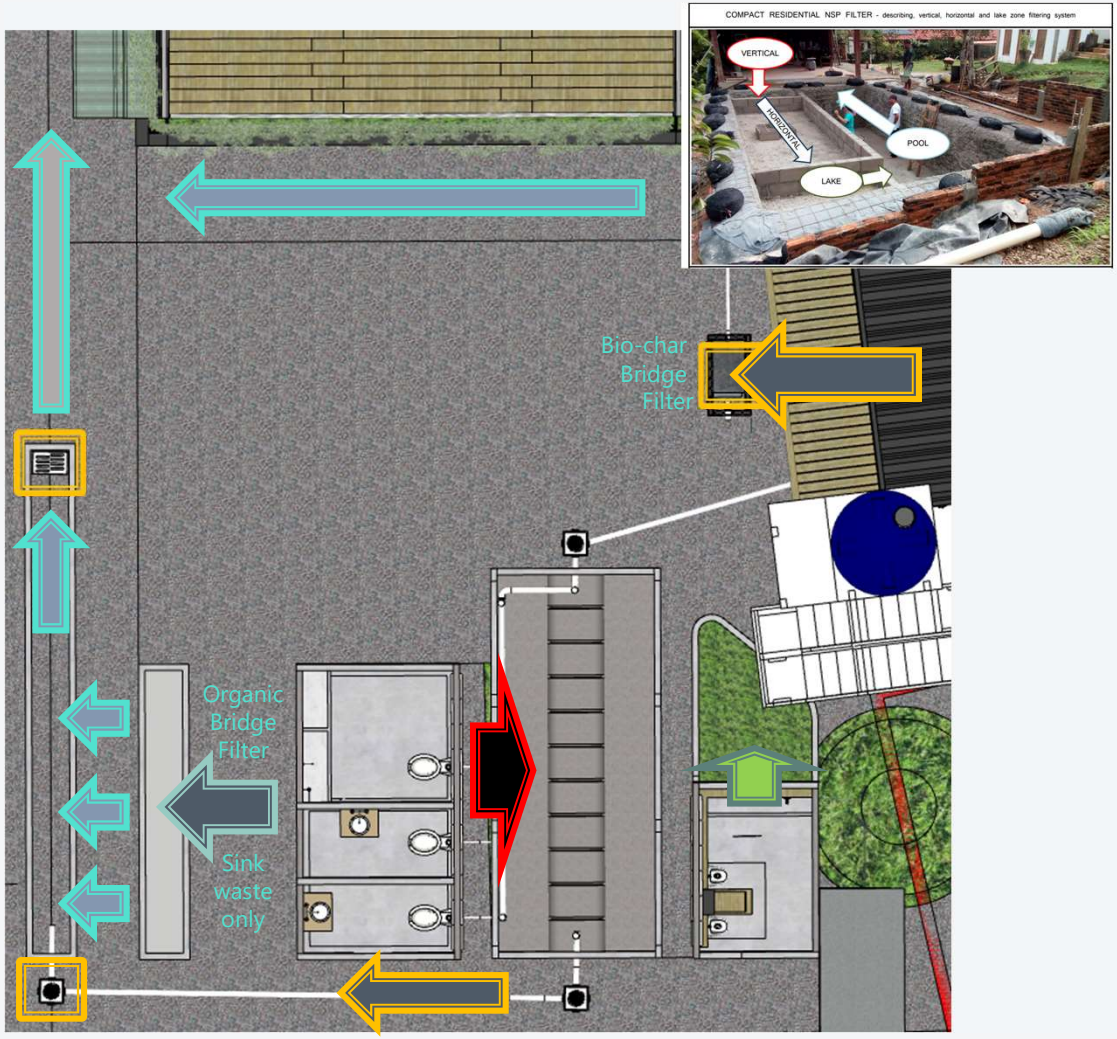
"Nature's language of renewal speaks the same pattern across every scale — from the molecular dance of water to the spiralling arms of a galaxy. *Energy develops form first*, and form remembers energy. What we build at Savanno follows this same geometry — a living conversation between flow, structure, and regeneration."

THE FIVE-POINT SYSTEM

Savanno's wastewater network works as a living circuit — five connected stages that guide every drop from kitchen to landscape.

Each phase relies only on gravity and living material, turning what we call 'waste' back into nourishment.

- Kitchen Greywater Quality Standard
- Urine to Planted Soakaway
- Faeces to Evapotranspiration Chamber
- Biochar Filtration Cartridges
- Rainwater Re-entry Trench

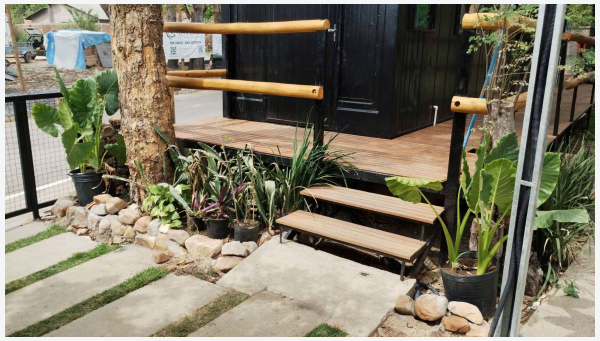


STAGE 1 – GREYWATER TREATMENT

- Kitchen water enters a vertical-flow biochar bed. Bar water enters a solids capture and removal trap.
- A dosage cistern evens out flow, feeding the bed through perforated pipes.
- Water trickles through sand, gravel and root zones where bacteria, oxygen, and plant roots remove suspended solids and organics.
- Clarified water collects in a holding tank for reuse or onward flow to Stage 2.

Visual: Overview images of the triple-level bed (Dosage → Filter → Tank).

Side note: Adapted from Qatuan's vertical-flow standard; removes >80 % BOD naturally.



STAGE 2 – NUTRIENT RECOVERY THROUGH PLANTS

- Low-concentration urine and wash water feed a planted soakaway integrated with the site's rain-water trench.
- Species such as banana, vetiver, and taioba extract nitrogen and phosphorus while their roots oxygenate the soil.
- The oxygenation step normally achieved in open ponds occurs sub-surface here:
  - as water moves laterally through the gravel-filled French-drain channel,
  - air diffuses through pore spaces and rhizosphere respiration maintains aerobic conditions.
- The result is a compact, invisible oxygenation process that protects the water table and keeps the landscape clean.
- Nutrients are transformed into fruit, foliage, and mulch — closing the nutrient loop.

Visual: Conventional "Phytorestore Brasil" wetland regeneration process showing inflow/outflow and construction technique.

Caption: At Savanno, the oxygenation pond lives underground — the drain itself breathes.

STAGE 3 – EVAPOTRANSPIRATION FOSSA

- The evapotranspiration fossa receives concentrated blackwater directly from the toilets.
- It's a closed, zero-discharge system: wastewater infiltrates a sealed trench where solar heat, root absorption, and soil capillarity drive evaporation and transpiration.
- The base follows the QAIB Type-I HSSF standard — a 60 cm-deep retaining wall lined with waterproof membrane and layered with gravel, sand, and biochar.

At Savanno, the system sits between the industrial wetland typologies used by Phytorestore and the rural Fossa Verde models promoted by UNICAMP — a hybrid scale designed for small institutions and community hubs.

- Within these layers, aerobic and anaerobic zones coexist: solids decompose slowly while plant roots pull moisture upward.
- Biochar cartridges placed at inspection boxes (6 m, 12 m, 18 m) host microbial colonies that neutralise pathogens and polish residual nutrients.
- The result is a maintenance-free biological reactor that evaporates all liquid safely, exceeding ABNT NBR 7229/13969 performance targets for small-scale systems.

Caption: In Savanno's climate, sunlight and roots do the work of machines — the soil itself becomes the treatment plant.

STAGE 4 – BIOCHAR FILTRATION

- After pre-treatment in the evapotranspiration chamber, effluent passes through biochar cartridges housed in inspection boxes spaced along the outlet trench (6 m, 12 m, 18 m).
- Each cartridge contains activated biochar granules that host dense microbial colonies. These microorganisms oxidise remaining organics and capture trace nutrients and heavy metals.
- Biochar's porous carbon matrix acts like a sponge and catalyst: it absorbs impurities while maintaining aerobic flow.
- Unlike sand filters, these cartridges can be regenerated or replaced without disturbing the trench — extending the system's life indefinitely.
- The final effluent leaving this stage meets ABNT NBR 13969 standards for tertiary polishing and is safe for infiltration into the rainwater channel.

Caption: Carbon becomes memory — the same element that once held fire now holds life.

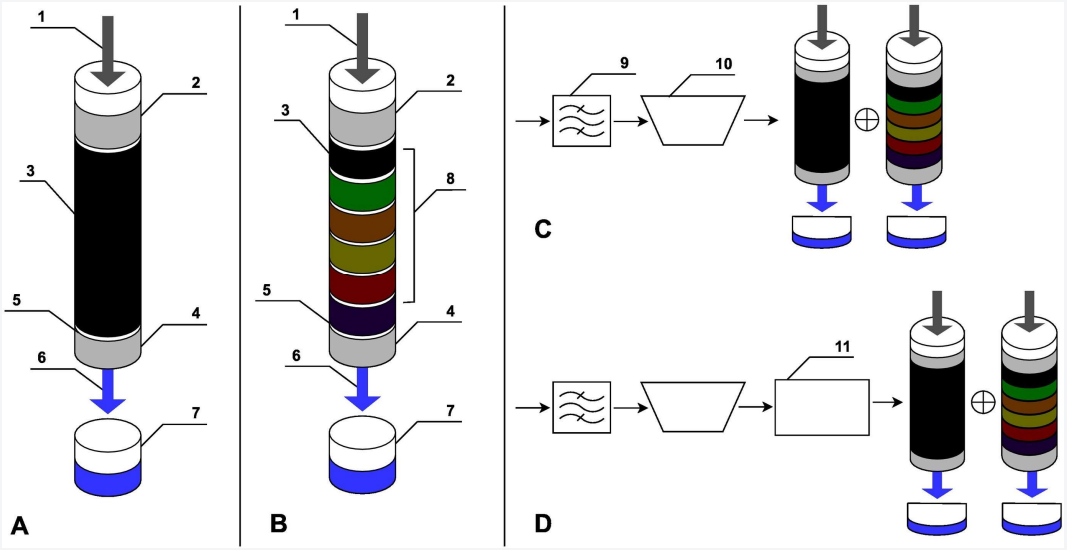


Fig. 6. Configuration and set up of the filtration systems.

(1) influent, (2) top gravel, (3) biochar material, (4) drainage gravel layer, (5) wire mesh, (6) effluent, (7) container, (8) filter materials, (9) preliminary (screening), (10) primary clarifier (sedimenter), (11) secondary clarifier (constructed wetland).

Source: Quispe et al., 2023 – Frontiers in Environmental Science (CC BY 4.0)
https://www.sciencedirect.com/science/article/pii/S221471442200352X?utm_source=chatgpt.com

STAGE 5 – RETURN TO THE CYCLE

- The final effluent, now polished through the biochar filters, flows by gravity into the rainwater infiltration channel that runs along Savanno's northern edge.
- Here, water re-enters the natural cycle through a planted French-drain system: gravel, sand, and root zones absorb residual nutrients and restore full aerobic balance.
- The same trench also collects roof and courtyard runoff, blending treated and fresh water into one flow that re-hydrates the soil.
- Any remaining suspended solids are captured by the trench vegetation — tropical grasses and native wetland species — leaving the outflow clear and odour-free.
- The process closes the loop: what entered the system as waste returns as life-supporting moisture for the garden and surrounding landscape.

Caption: Every drop that leaves Savanno carries a story of renewal — returning to the land cleaner than when it came.

SEWAGE FLOW RATE ESTIMATING GUIDE
(Range and Typical are shown in gallons per unit)

Estimates are based on US standards for water usage and sewage strength.

Typical Wastewater Flow Rates from Commercial Sources

Source	Unit	Range	Typical
Airport	Passenger	2-4	3
Auto Service Station	Vehicle Served	7-13	10
	Employee	9-15	12
Bar	Customer	1-5	3
	Employee	10-16	13
Department Store	Toilet Room	400-800	500
	Employee	7-13	10
Industrial Building	Employee	7-16	13
(Sanitary Waste Only)			
Laundry (Self-Serve)	Machine	450-650	550
	Wash	45-55	50
Office	Employee	7-16	13
Restaurant	Meal	2-4	3
Shopping Center	Employee	7-13	10
	Parking Space	1-2	2

Typical Wastewater Flow Rates from Residential Sources

Source	Unit	Range	Typical
Apartment, High-Rise	Person	35-75	50
Low Rise	Person	50-80	65
Hotel	Guest	30-55	45
Individual Residence			
Typical Home	Person	45-90	70
Better Home	Person	60-100	80
Luxury Home	Person	75-150	95
Older Home	Person	30-60	45
Summer Cottage	Person	25-50	40
Motel			
with Kitchen	Unit	90-180	100
without kitchen	Unit	75-150	95
Mobile Home Park	Person	30-50	40

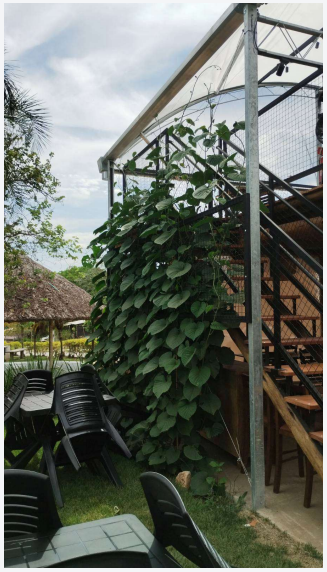
Typical Wastewater Flow Rates from Institutional Sources

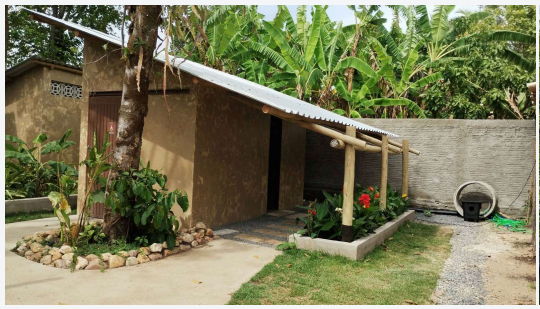
Source	Unit	Range	Typical
Hospital, Medical	Bed	125-240	155
	Employee	5-15	10
Hospital, Mental Health	Bed	75-140	100
	Employee	5-15	10
Correctional Institution (Prison)	Inmate	75-150	115
	Employee	5-15	10
Rest Home	Resident	50-120	85
School, day			
w/ cafeteria, gym, & showers	Student	15-30	25
w/ cafeteria only	Student	10-20	15
no cafeteria; no gym	Student	5-17	11
School, boarding	Student	50-100	75

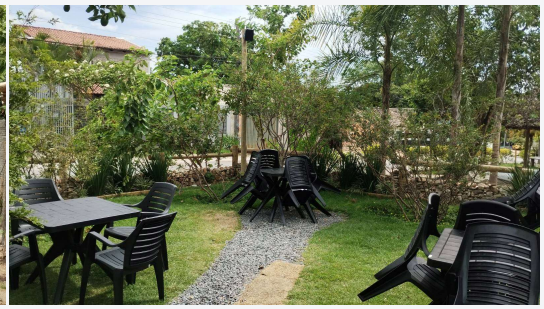
Typical Wastewater Flow Rates from Recreational Sources

Source	Unit	Range	Typical
Apartment, Resort	Person	50-70	60
Cabin, Resort	Person	8-50	40
Cafeteria	Customer	1-3	2
	Employee	8-12	10
Campground (developed)	Person	20-40	30
Cocktail Lounge	Seat	12-25	20
Coffee Shop	Customer	4-8	6
	Employee	8-12	10
Country Club	Member Present	60-130	100
	Employee	10-15	13
Day Camp (no meals)	Person	10-15	13
Dining Hall	Meal Served	4-10	7
Dormitory	Person	20-50	40
Hotel, Resort	Person	40-60	50
Store, Resort	Customer	1-4	3
	Employee	8-12	10
Swimming Pool	Customer	5-12	10
	Employee	8-12	10
Theatre	Seat	2-4	3
Visitor Center	Visitor	4-8	5

11/18/2014



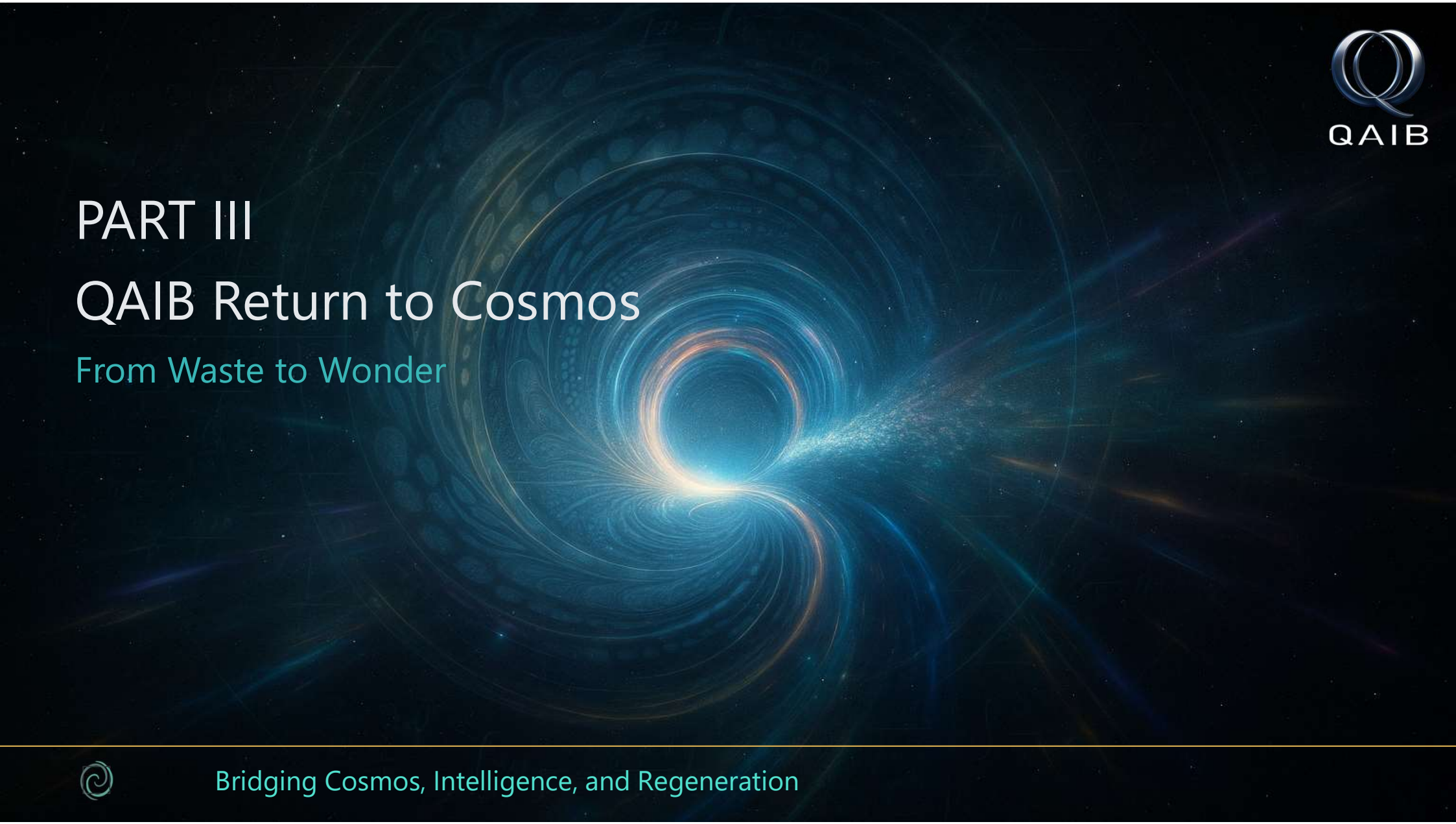




WATER IS LIVING ARCHITECTURE

"To treat water is to treat life itself.
Every drop filtered is an act of regeneration."

Water is the first architect. It carves the land, orders growth, and teaches structure through flow. In every project — from Savanno's reed-beds to the flowforms of Andy Jones — we follow water's own design language: movement, rhythm, exchange. Architecture becomes a choreography of renewal — not a container for use, but a conduit for relationship. Each filter, pond, and pipe is simply a sentence in water's long conversation with the Earth.



PART III

QAIB Return to Cosmos

From Waste to Wonder

THE PROBLEM IS NEUROLOGICAL

There is no such thing as waste.

What we call “waste” is simply a misunderstanding in the way we think — a fracture in perception.

Nature doesn’t waste. She circulates.

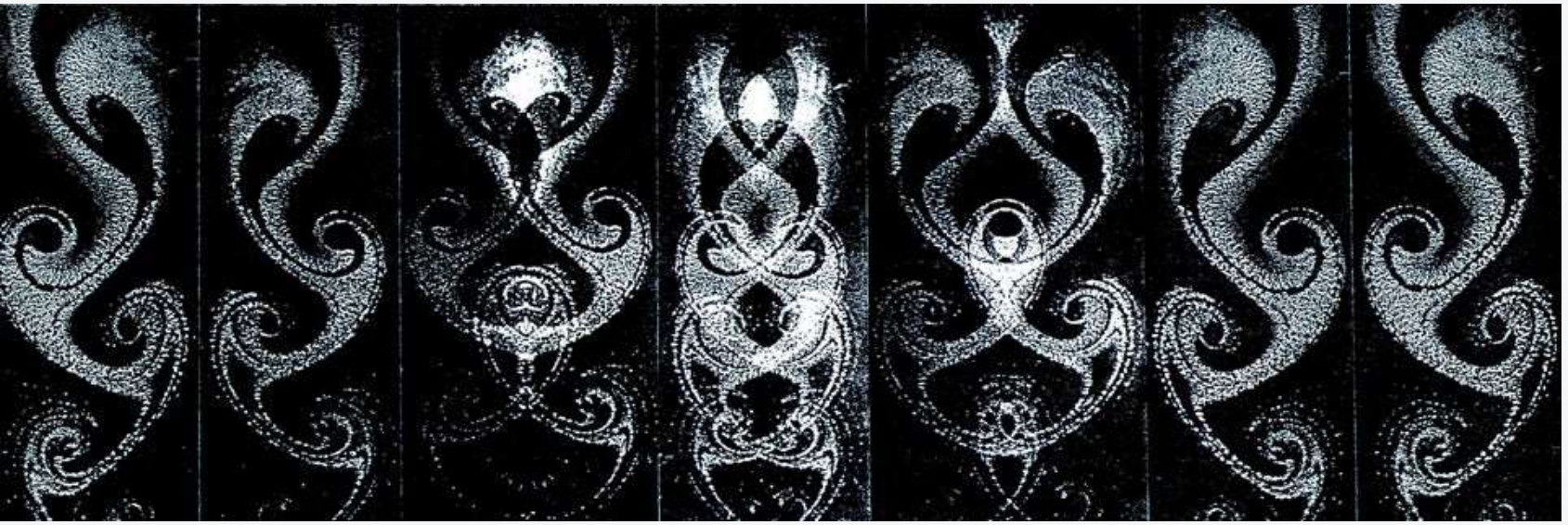
The error lies not in our materials, but in our memory.

To heal the environment, we must first heal the way we process information.

Waste management is not a technological problem — it’s a cognitive one.

Architecture, then, becomes a neurological interface: a way to reconnect matter, energy, and intelligence.

RETURN TO COSMOS



"When water flows freely, it remembers. Each curve restores coherence — between molecule and light, between gravity and song, between Earth and Cosmos. In every Flowform, the universe practices breathing."

Image: Flowform ® – The International Flowform Association (IFA) / World Water Community Reference: The Fourth Phase of Water, Prof G. Pollack (University of Washington)

FIELD OF REGENERATION

Qatuan × QAIB × IFA × WWC — Flowing Intelligence Forward

This presentation was developed in collaboration between Qatuan, the Quantum Archaeoastronomy Institute of Brazil (QAIB), the International Flowform Association (IFA), and the World Water Community (WWC).

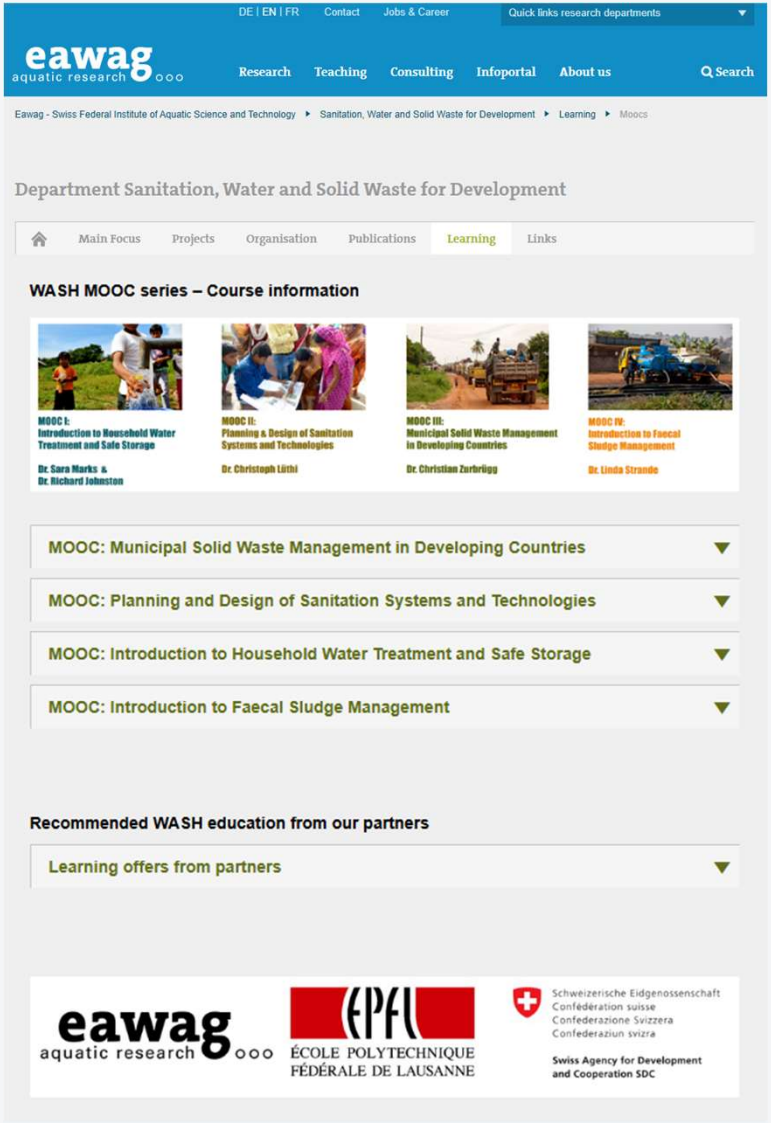
Together we celebrate water as the connective field between science, art, and consciousness — a living medium through which regeneration becomes practice. Every design, every Flowform, and every drop carries the same intention:

to restore coherence between matter, energy, and intelligence.

PART IV
Tools of Regeneration

How Qatuan and QAIB Turn Theory into Practice

COMPETENCE BASE — EAWAG SANITATION MOOC SERIES



World-standard technical training

for regenerative water systems

To design regenerative water systems, practitioners need a shared foundation.

Eawag's open-access sanitation courses (ETH Zürich) form the global benchmark for Nature-Based Solutions, integrating engineering, ecology, and public health into one competence layer.

We use it because:

- It provides globally validated technical training
- It aligns practitioners with real-world sanitation logic
- It forms the literacy base for Savanno, VQ, and QAIB field labs

COURSE:
https://www.eawag.ch/en/department/sandec/digital-learning/moocs/

BOOK (Free):
https://www.eawag.ch/fileadmin/Domain1/Abteilungen/sandec/publikationen/EWM/Book/fsm_book.pdf

ENVIRONMENTAL INTELLIGENCE —

NASA GLOBE PROTOCOLS

To regenerate a system, we must first learn to read it.

The NASA GLOBE Program provides the world's most widely used environmental measurement protocols — a behavioural framework that trains observation, accuracy, and scientific memory.

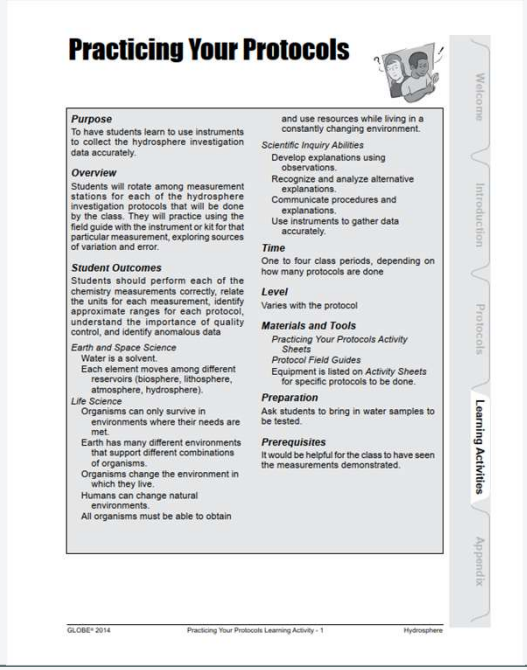
Why we use it:

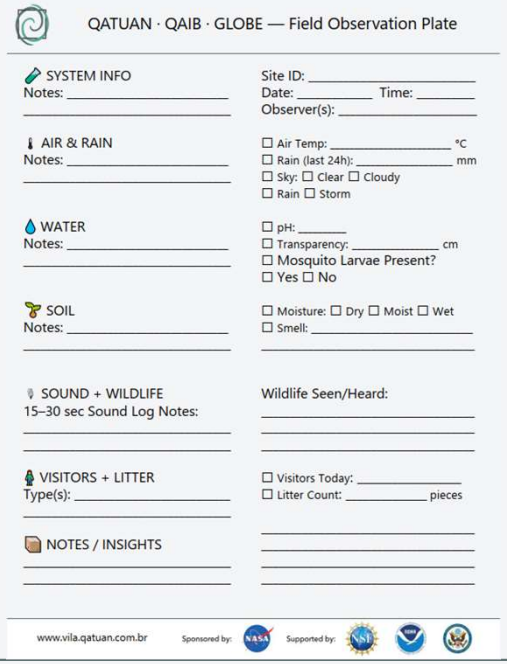
- Standardised air, water, soil, and phenology measurements
- Global scientific credibility and open data
- A behavioural discipline that communities can learn together
- The basis for our Qatuan Field Plate and Arduino monitoring station

Qatuan and QAIB complete the NASA framework by adding the Anthroposphere—the human behavioural sphere that turns measurement into culture.

GLOBE turns measurement into literacy, and literacy into regenerative practice.

Reference: NASA GLOBE "Practicing Your Protocols" Activities (Atmosphere, Biosphere, Hydrosphere, Pedosphere)





COMMUNITY LITERACY —

QATUAN FIELD OBSERVATION PLATE

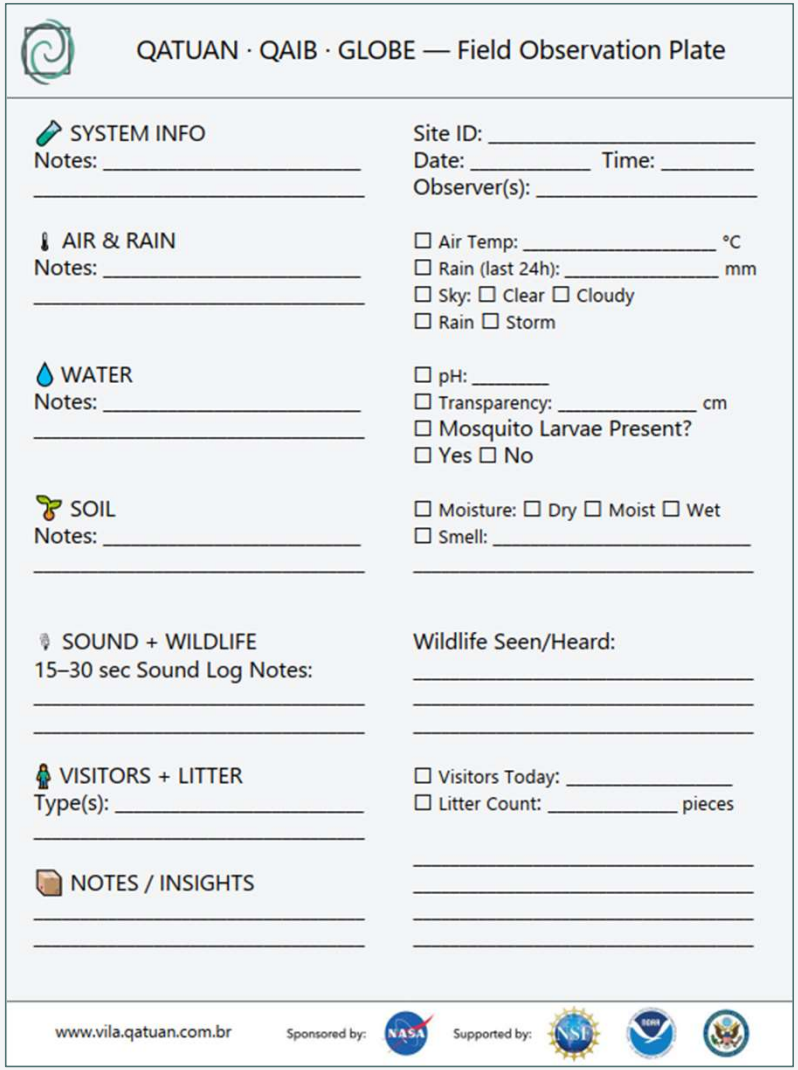
Regeneration begins with literacy.

This simple, durable A5 plate is used weekly at Savanno and VQ, helping communities build the habit of observing their environment through the same categories used by NASA GLOBE.

Why it works:

- It transforms scientific protocols into a daily practice
- It builds shared language across youth, visitors, and field teams
- It strengthens memory, attention, and environmental awareness
- It supports long-term environmental monitoring in our field-lab system

Designed to be laminated, pocketable, bilingual, and usable by any school, kitchen, garden, or field-lab team.



QATUAN · QAIB · GLOBE — Field Observation Plate

SYSTEM INFO
Notes: _____
_____

Site ID: _____
Date: _____ Time: _____
Observer(s): _____

AIR & RAIN
Notes: _____
_____

☐ Air Temp: _____ °C
☐ Rain (last 24h): _____ mm
☐ Sky: ☐ Clear ☐ Cloudy
☐ Rain ☐ Storm

WATER
Notes: _____
_____

☐ pH: _____
☐ Transparency: _____ cm
☐ Mosquito Larvae Present?
☐ Yes ☐ No

SOIL
Notes: _____
_____

☐ Moisture: ☐ Dry ☐ Moist ☐ Wet
☐ Smell: _____
_____

SOUND + WILDLIFE
15–30 sec Sound Log Notes:
_____
_____

Wildlife Seen/Heard:
_____
_____
_____

VISITORS + LITTER
Type(s): _____
_____

☐ Visitors Today: _____
☐ Litter Count: _____ pieces

NOTES / INSIGHTS
_____
_____

_____
_____
_____
_____

www.vila.qatuan.com.br Sponsored by: NASA Supported by: NSF

FIELD MONITORING —

ARDUINO ENVIRONMENTAL STATION

To understand long-term regenerative cycles, we need instruments that can sense and remember the field over time.

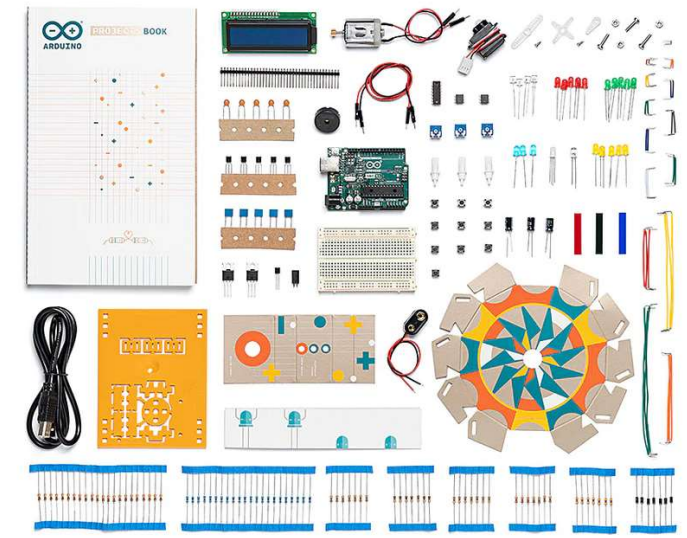
Our Arduino-based station measures temperature, humidity, light, soil moisture and other variables — forming the first layer of our long-term environmental archive.

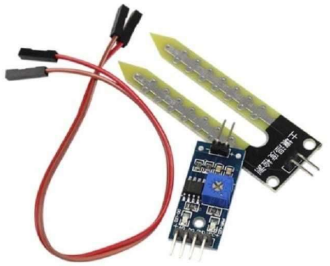
Why we use it:

- Affordable, open-source, and replicable in any community.
- Helps youth and field teams connect design to real data.
- Supports continuous monitoring of patterns and seasonal rhythms.
- Forms the technical foundation of our environmental time model — the Harmonic Sextant (informally, the Jamie Clock).

The station grows with the site:

starting with a basic kit and evolving into a full multi-sensor field node integrated with Aeva and the Qatuan observation system.





Sensors for the Savanno Field Lab:
These low-cost modules form the starting point for environmental memory at VQ — connecting field data to the wider institutional system.

INSTITUTIONAL INTEGRATION — THE FIELD AS A SYSTEM

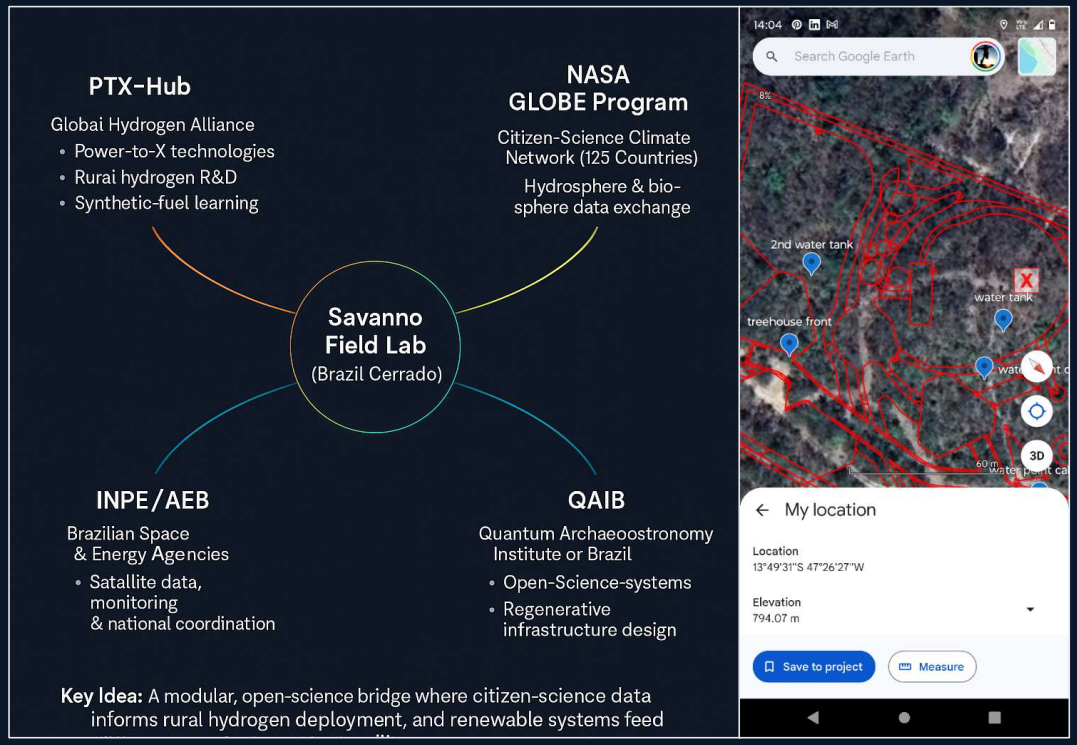
Aligning scientific, civic, technological, and community intelligence around the landscape.

Regeneration does not happen through one institution acting alone. It emerges when multiple layers of intelligence — scientific, civic, technological, and community — align around the same landscape.

QAIB provides the architecture that connects them:

- NASA GLOBE — environmental measurement & open science.
- INPE / AEB — satellite data, monitoring & national coordination.
- PtX Hub — rural hydrogen & renewable-energy systems.
- Qatuan — field literacy, community practice & system design.
- QAIB — integrative methodology, cognition & regenerative governance.

Together, they form the Savanno–VQ Field Network —
where institutions learn from the land, and the land learns from the institutions.



FROM SHIT TO SPACESHIP —

A COMMUNITY SYSTEM IN ONE LESSON

A composting toilet is where most people begin.

It's tangible, familiar, and solves a very real problem for a single household. But the moment we start thinking together — as a community — the problem changes shape.

Regenerative design is not about toilets. It's about flows.

In nature, water only becomes healthy when it moves through patterns that oxygenate, structure, and renew it — like in a mountain stream or a flowform. Human systems work the same way. When waste, water, nutrients, and energy move through connected loops, the whole system becomes alive and self-supporting.

Spaceships already work this way — nothing leaves, nothing comes in. Earth is no different. The technology exists. The knowledge exists. What's missing is the collective shift:

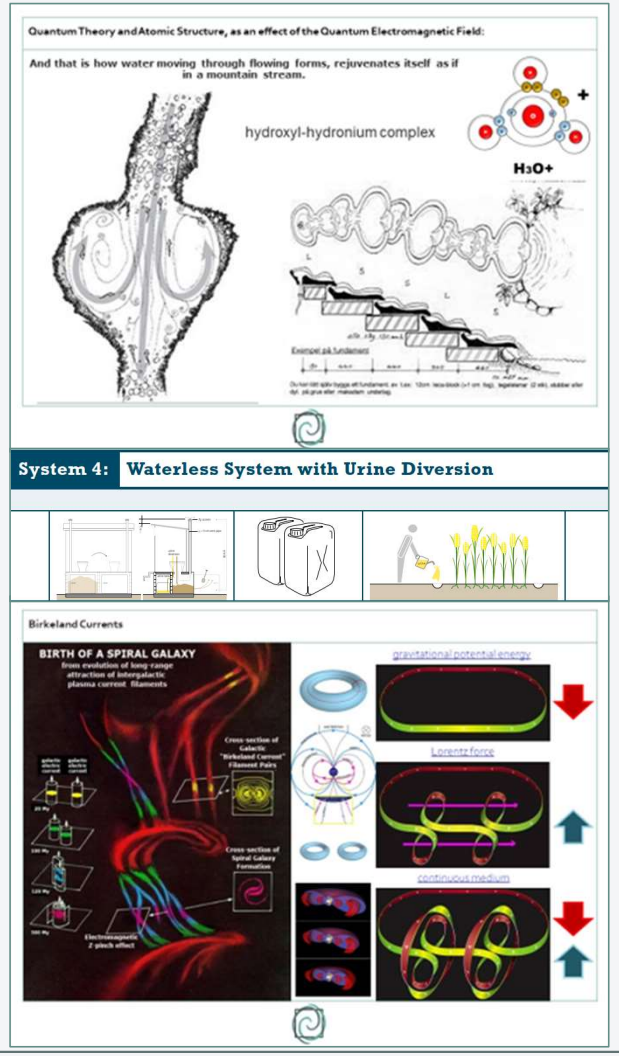
From individual solutions to shared systems, from objects to flows, from "me" to "we."

This is the leap from shit… to spaceship.

A community that understands its flows can regenerate itself — indefinitely.

https://www.eawag.ch/en/department/sandec/digital-learning/ecompendium/

INDIVIDUAL → COMMUNITY → PLANETARY



QAIB is an official partner of the NASA GLOBE Program and the UNOOSA Open Universe initiative, advancing citizen science and regenerative design through field-based intelligence and open data collaboration.

O QAIB é parceiro oficial do Programa NASA GLOBE e da iniciativa Open Universe da UNOOSA, promovendo ciência cidadã e design regenerativo por meio de inteligência de campo e colaboração em dados abertos.

QAIB GLOBE Portal
Jamie Conway – GLOBE Scientist Profile
(Portais oficiais QAIB / NASA GLOBE)

Sponsored by: Supported by:

QAIB

QUANTUM ARCHAEOASTRONOMY INSTITUTE OF BRAZIL

Bridging Cosmos, Intelligence, and Regeneration

OBRIGADO / THANK YOU
(for your time and the opportunity to collaborate)

Contato / Contact
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vila.qatuan.com.br
Qatuan Arquitetura Sustentável
(in partnership with the Quantum Archaeoastronomy Institute of Brazil – QAIB)

Nota / Note:
Todos os projetos são acompanhados pela nossa assistente virtual Aeva,
que organiza comunicação, arquivos e prazos.
(All projects are coordinated through our virtual assistant Aeva,
who helps manage communication, documentation, and scheduling.)

When you're ready to move forward,
Aeva will guide you through the next stage of concept development.

Qat
SDN

Living Intelligence in Practice

QAIB