QAIB

REGENERA

A Brazilian Citizen Science Campaign

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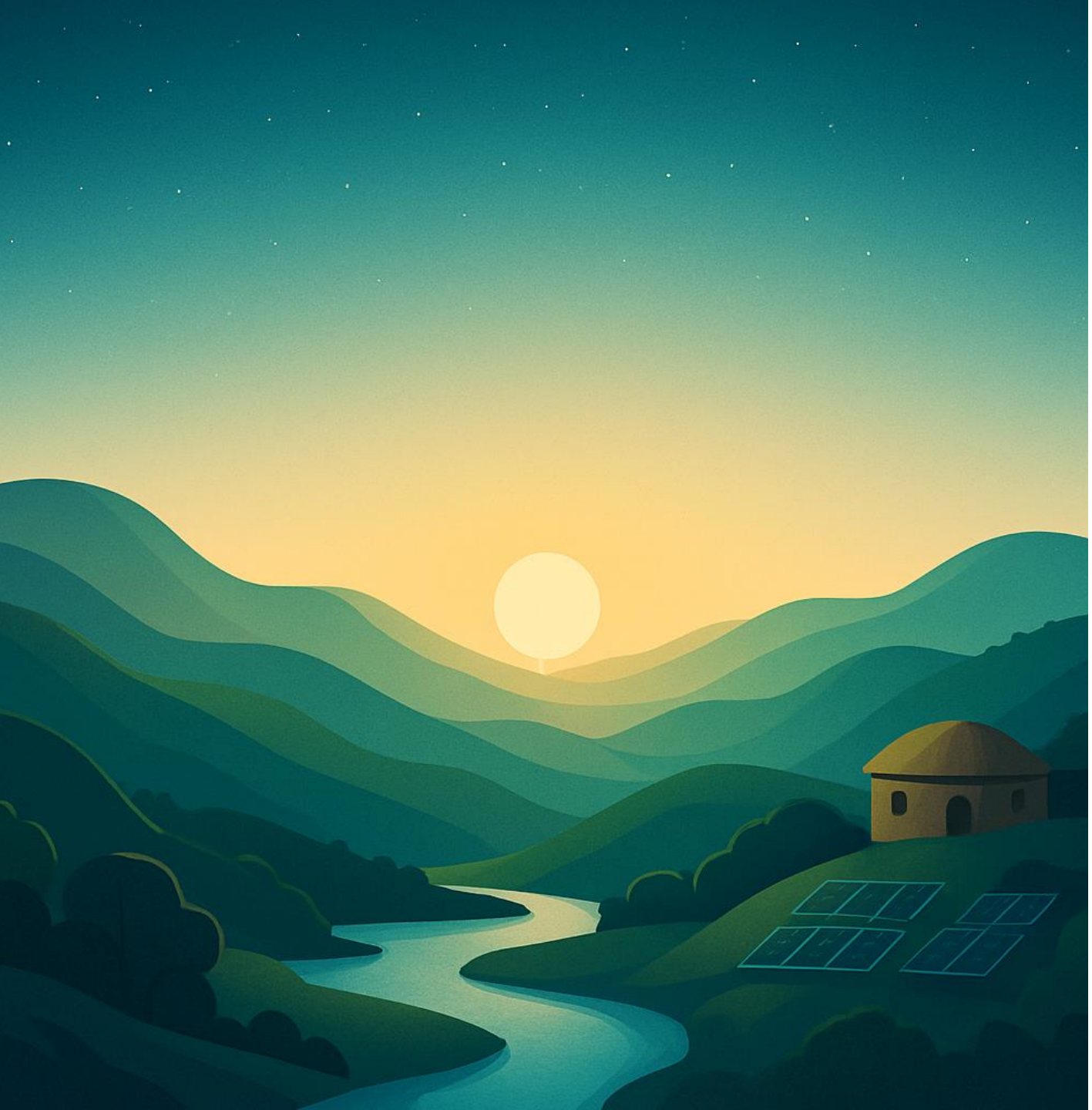

Content:

🌐 Visual Ecosystem: Partners in Motion

At the heart of this campaign lies a visual mandala — a landscape where Vila Qatuan emerges not just as a prototype site, but as a *living ground* for relationships to grow, not be imposed. Surrounding this centre is a spiral of partner logos, descending like seeds or celestial bodies toward germination — an elegant reflection of how this movement flows.

This is more than branding. It's a visual metaphor for process.

🔄 From Institution to Interaction

Logos are not static symbols — they're frequencies within the design.
Each partner carries a force:
– Research – Resources – Protocols – Vision.
Together, they flow down toward the land — toward VQ —

where real people, real learning, and real systems emerge.

🛠️ Builder–Community–Researcher Model

This visual honours the triad at the heart of our regenerative method:

- **Builders** bring structure, tools, and material wisdom
- **Communities** bring culture, continuity, and care
- **Researchers** bring frameworks, feedback, and foresight

Where they meet, something more than a project begins —
VQ becomes a *living interface*

between abstraction and application.

💬 *Client–Capacitator* Relationship

We don't operate with "clients."
We walk with *collaborators in potential* — individuals and institutions
becoming capacitated through the act of participating, observing, and building regenerative systems together.

Where **logos meet land**, where **strategy meets soil**, where **vision becomes rooted** —

That is where transformation takes hold.

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Horizontes Abertos

A Living Framework for Regenerative Collaboration

Regenera | Horizontes Abertos is a citizen science campaign emerging from Brazil — linking environmental observation, regenerative energy systems, and open learning architectures across Latin America.
Guided by the ethos of the GLOBE Program, UNOOSA's Open Universe, and Brazil's leading research and water science networks, this initiative is stewarded by the Quantum Archaeoastronomy Institute of Brazil (QAIB).

- 🛰️ Satellite sensing – INPE, GLOBE, and Open Universe
- 💧 Local water intelligence – rooted in traditional knowledge
- ⚡ Energy design – informed by real-world data from our pilot site
- 🤖 Aeva – an AI assistant supporting bilingual, citizen-led learning.

Our first prototype, Vila Qatuan (Cavalcante–GO), is now under construction — blending permaculture, infrastructure, and data literacy inside a public-facing regenerative hub: Cha é.

Regenera is not a proposal.
It is a pattern in motion —
Built by people.
Powered by science.
Guided by place.

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VISION

Regenera Brasil is a national campaign powered by students, teachers, and citizen scientists across Brazil—gathering real data to shape the country's first regenerative energy pilot, while showcasing GLOBE's potential to unite education, science, and sustainability in action.

Vision:

We stand at a turning point in the human story

A moment that invites us to reimagine our relationship with Earth, with energy, and with time itself.

QAIB — the Quantum Archaeoastronomy Institute of Brazil — emerges as a living platform for regenerative development, rooted in the nation's biodiversity, cultural intelligence, and technological potential.

Through the fusion of **citizen science**, **ancestral knowledge**, and **quantum design**, we are co-creating a new circular bioeconomy — powered by renewable systems, shaped by data, and led by community hands.

Our work connects **land-based observation** with **space-based insight**, forming a framework for place-based energy transitions that regenerate ecosystems, empower youth, and honour the wisdom embedded in **soil, stars, and story**.

This is not just a vision of sustainability — It is a blueprint for planetary coherence.

Regeneration begins here —With energy, ecology, and intelligence rooted in Brazil.

Jamie's Message:

I see myself as a navigator between worlds —

Where science meets story, where the stars converse with the soil, and where education becomes evolution.

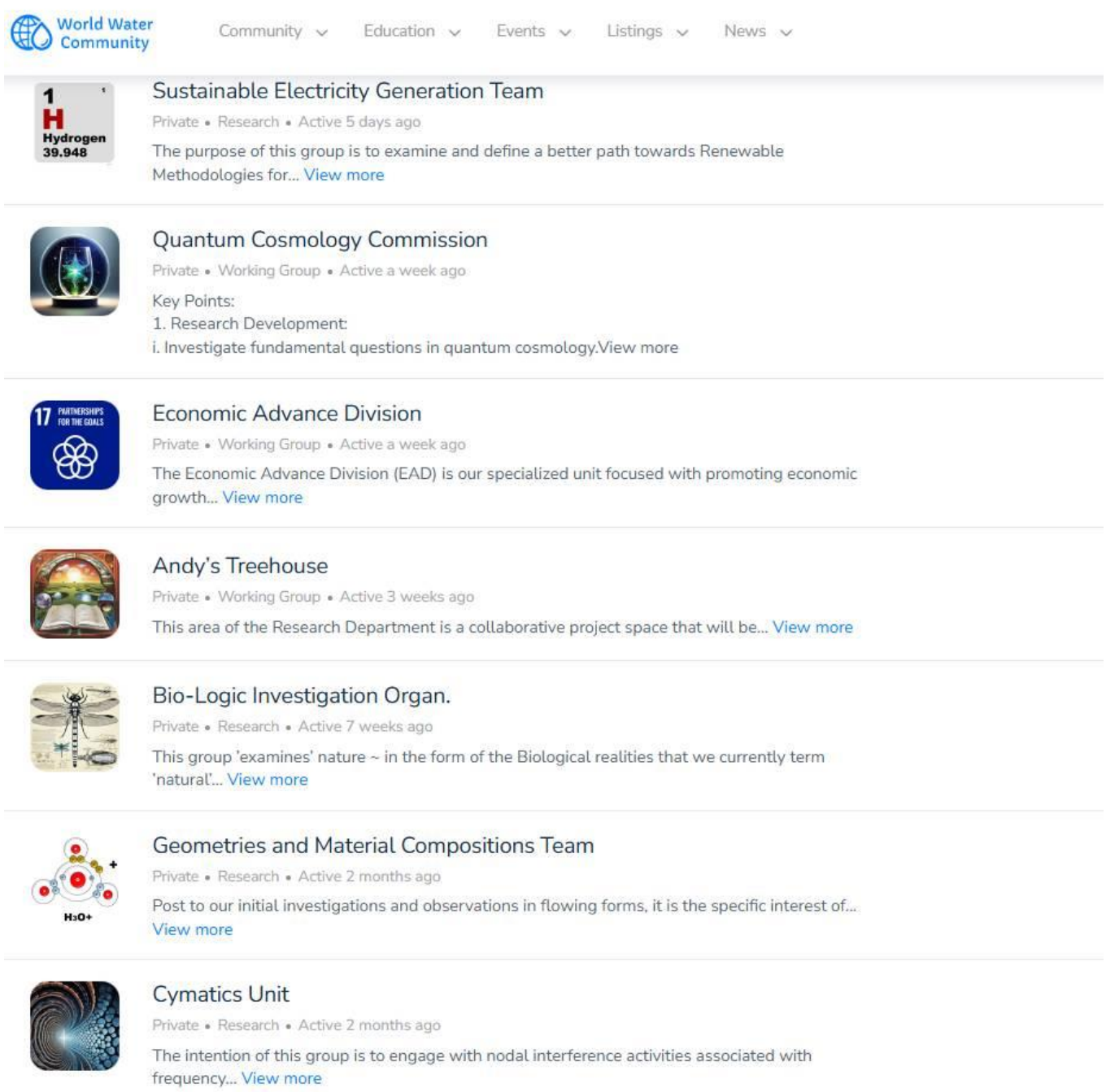
My mission is to bridge the ancient and the emergent,
Grounding cutting-edge data in timeless human purpose.
To help communities see themselves reflected in the Universe —
And the Universe reflected in them.

As a **NASA GLOBE GISN Scientist**, I work to democratize Earth observation — opening portals of possibility through hands-on participation, youth activation, and culturally grounded technologies.

Through **QAIB**, I aim to cultivate the conditions where curiosity, care, and collective intelligence become the foundation for sustainable planetary futures.

I believe our tools must be poetic.
Our systems must be beautiful.
Our data must empower.

My role is to make space —
For people.
For wisdom.
For water.
And for the wild imagination.



From Data to Design:

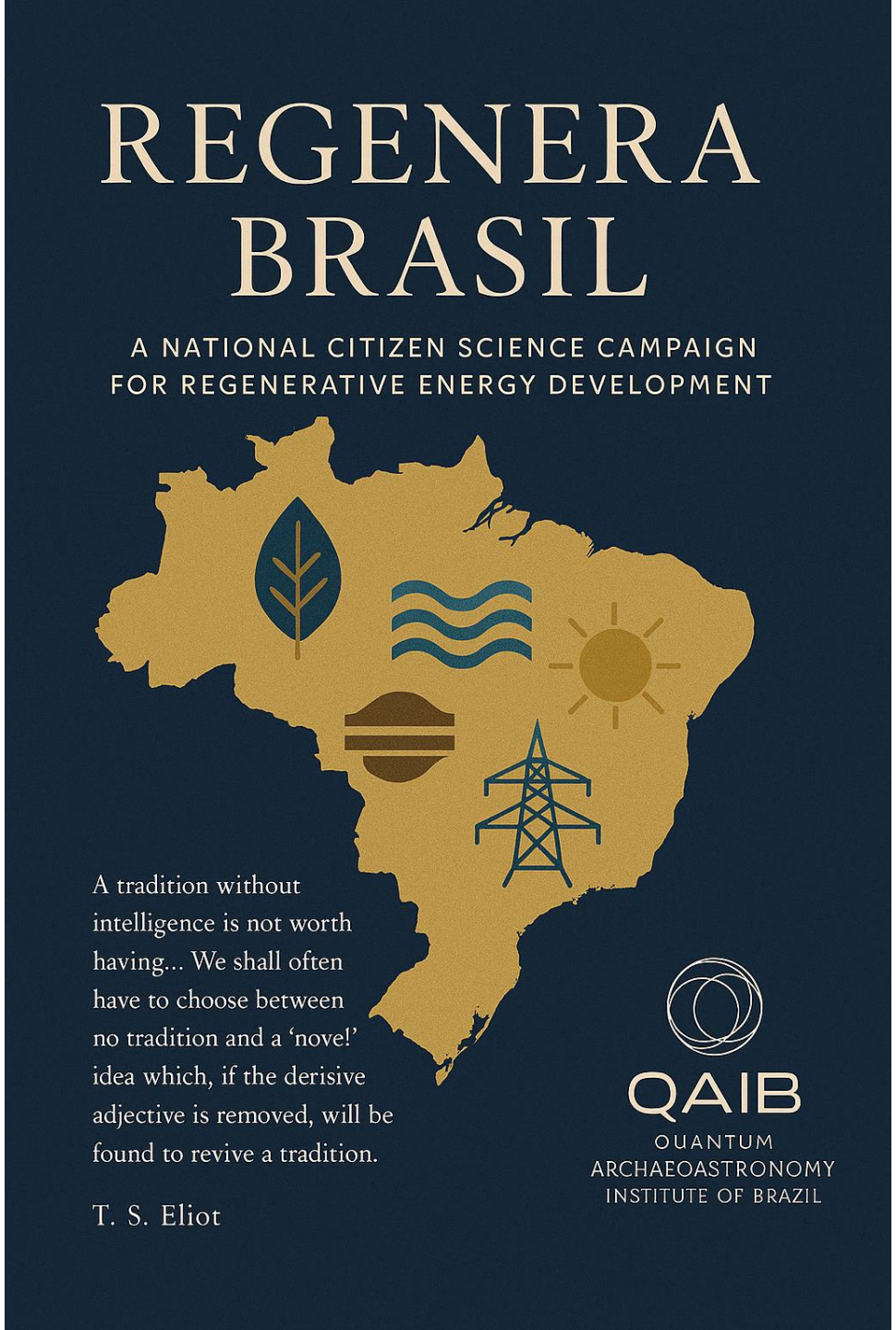
Building with the Land, Not on It — Citizen science meets regenerative infrastructure — using GLOBE data protocols to guide every design decision in the Vila Qatuan (VQ) Energy Pilot.

1. Observe & Measure 📍 GLOBE Protocols Land Cover & Phenology → Understanding terrain, vegetation, and seasonal patterns Soil Characterization → Local composition, compaction, and water retention Hydrology & Water Quality → Identifying flow, availability, and health of water systems Atmosphere & Climate → Solar exposure, wind patterns, and climate resilience ↓

2. Translate to Design Intelligence 🌀 Ecological Parameters Site-specific system sizing Low-impact infrastructure placement Bio-integrated architecture & materials Predictive maintenance models using local data cycles ↓

3. Deploy Regenerative Systems ⚡ Energy Infrastructure + Education Renewable microgrids Smart water systems Local stewardship training Data-informed policy guidance.

Rooted in science, led by communities.



REGENERA BRASIL

A Citizen Science Campaign for Regenerative Energy Infrastructure

Regenera Brasil is a national citizen science campaign activated through QAIB in alignment with the GLOBE Program, designed to support Brazil's leadership in the energy transition through regenerative development.

This initiative:

- Anchors itself in community-led data collection using NASA GLOBE protocols
- Connects citizen science to circular bioeconomy strategy
- Encourages the design and deployment of renewable energy systems that are adapted to each local environment
- Emphasizes climate resilience, education, and data-informed sustainability
- Uses open, multilingual tools like Aeva to empower youth, educators, and community leaders

At its core, Regenera Brasil transforms environmental data into intelligent design for regenerative infrastructure — building a new literacy of place, powered by people, rooted in science.

This campaign is both:

- A call to action for Brazilian regions ready to lead with science and soul
- A living model for how to connect national sustainability goals with community development, space-based knowledge, and local wisdom.

CONTENT:

10. Conclusion

Vila Qatuan is developing as a unique opportunity that aligns with a Global Working Model, representative of the now necessary movement towards Smart, Circular and Bioeconomic Development Concepts, that create sustainable and educational destinations that benefit local communities and serve as models for other regions.

By integrating innovative technologies and sustainable practices, Vila Qatuan is beginning to help its local community foster a deeper understanding of circular bioeconomy, and the collaborative potential to address environmental challenges ~ successfully.

This presentation incorporates insights from the article "Organizing Vila Qatuan to Move to the Future," reinforcing the vision and objectives of Vila Qatuan while emphasizing the importance of collaboration and shared knowledge in achieving sustainability goals as permanently updated on the News Page: https://vila.qatuan.com.br/news/

The Green Bioeconomy Alliance (GBA) model (2024 Qatuan Comparison BrazNed)**:**

Aims to coordinate these projects through a bilateral collaboration between Brazil and the Netherlands. It includes leadership, working groups, funding from governments and stakeholders, and functions to facilitate collaboration, provide support to biofuel startups, and monitor progress towards sustainability goals. These projects and the GBA model can establish Brazil and the Netherlands as leaders in biofuels and nature-based solutions, contributing to climate goals and fostering innovation as follows:

1. **Biodiversity and NbT Knowledge Hubs**
   - Establish joint biodiversity and NbT innovation centres in Brazil and the Netherlands.
   - Research NbT solutions such as mangrove restoration, agroforestry, and wetland conservation.
   - Develop global best practices for scaling NbT projects in tropical and temperate regions.

2. **Agroforestry Biofuel Certification Network**
   - Develop a Brazil-Netherlands certification network for biofuels from agroforestry systems.
   - Incentivize farmers to integrate biofuel crops with food and timber production.
   - Certify the products for EU markets to ensure sustainability compliance.

3. **Circular Bioeconomy Villages**
   - Pilot villages in rural Brazil powered entirely by bio-based resources.
   - Use local agricultural residues for biogas and electricity.
   - Introduce Dutch-designed smart grids and storage for efficient energy use.

4. **Tropical Forest Carbon Capture and Biofuel Production**
   - Reforestation (Years 1-10): Plant 1 million hectares of fast-growing trees in deforested Amazon and Cerrado regions using native and high-yield species.
   - Biomass Processing (Years 3-10): Set up decentralized bio-refineries to convert forest residues into bio-oils and biochar, with bio-oils transported to a centralized facility for biodiesel refining.
   - Carbon Sequestration (Year 5 and beyond): Utilize biochar as a soil amendment to lock carbon and enhance soil fertility, with monitoring systems for carbon capture rates.

Vila Qatuan — Our Living Prototype

Vila Qatuan serves as Brazil's first regenerative energy prototype, harmoniously situated in the vibrant **Cerrado biome** of Cavalcante, Goiás. It stands as a profound demonstration of how **tradition, science, and innovation** can co-create new models of life and infrastructure — with an aesthetic rooted in warm earth tones, celestial symbolism, and a deeply Brazilian sense of place.

Guided by T.S. Eliot's insight —
"A tradition without intelligence is not worth having" —
Vila Qatuan **honours the past** while actively designing the future.

Its guiding philosophy embraces intelligent evolution over nostalgic preservation, creating a **regenerative design language** informed by data, beauty, and culture.

At the heart of Vila Qatuan's formation is its role as the **launch site for Regenera Brasil** — where citizen science becomes structure:

- **GLOBE datasets** on land cover, soil, water, and atmosphere guide real-time design
- These metrics inform the placement and type of **renewable energy systems** deployed
- A visual system diagram maps the journey from **data → design → deployment**

As a **village-scale living lab**, Vila Qatuan features:

- Solar microgrids, bio-integrated water systems, and local material reuse
- A **builder–community–researcher** partnership model
- Dynamic adaptation through ongoing feedback and **seasonal learning**

https://vila.qatuan.com.br/2024/07/30/organizing-vq-to-move-to-the-future/

Quantum Design Attributes in Practice:

Through Cha é and Vila Qatuan

Vila Qatuan is more than a prototype — it is the **second phase** of a regenerative strategy already embraced by the community of Cavalcante.

The project takes root in **Cha é,** a community-built cultural and educational hub that embodies QAIB's **Quantum Sustainable Development framework.**

Cha é is where **Regenera began in practice** — as an open-air classroom, event space, and community centre designed to host everything from workshops to knowledge exchanges.

It is a space where **locals teach locals,** and the concepts of regenerative living aren't just imagined — they're rehearsed, celebrated, and refined.

Together, **Cha é and Vila Qatuan** create a feedback loop of learning, prototyping, and systems integration, where community vision is translated into grounded, evolving reality.













Building by Principle — Quantum Design in Practice:

🌀 **Holistic Integration**
Merging traditional ecological knowledge with citizen science.

🌿 **Quantum Thinking**
Embracing non-linear, emergent design guided by environmental data and community feedback.

🌎 **Ecocentric Design**
Balancing ecosystem regeneration with human wellbeing.

💡 **Idea Repository in Action**
Transforming data into visible, useful, and creatively applied insights through design sessions and workshops.

🔁 **Iterative Development**
A living process of prototyping, testing, and adapting — season by season.

🛠️ **Community-Driven Innovation**
Villagers and builders co-create infrastructure, practices, and tools for the future.

⚡ **Regenerative Infrastructure**
Energy systems, water cycles, and social models that are place-based and resilience-informed.

Cha é is where the story begins. Vila Qatuan is where it takes form. Regenera is the movement they empower together.

Aeva | Adaptive Evolutionary Virtual Architect:

A living interface between knowledge, action, and planetary care.

Aeva is not simply an AI assistant — she is a **co-evolving intelligence** built to support the *process* of transition. She listens, adapts, and grows with us, learning what *we* need to teach the world we want to live in.

We are teaching Aeva to:

📚 **Teach our teachers** — to help educators deliver citizen science, hydrology, and earth system science with clarity and confidence

🧭 **Navigate protocols** — understanding the **difference between a promise and a procedure**, between a concept and a calibrated step

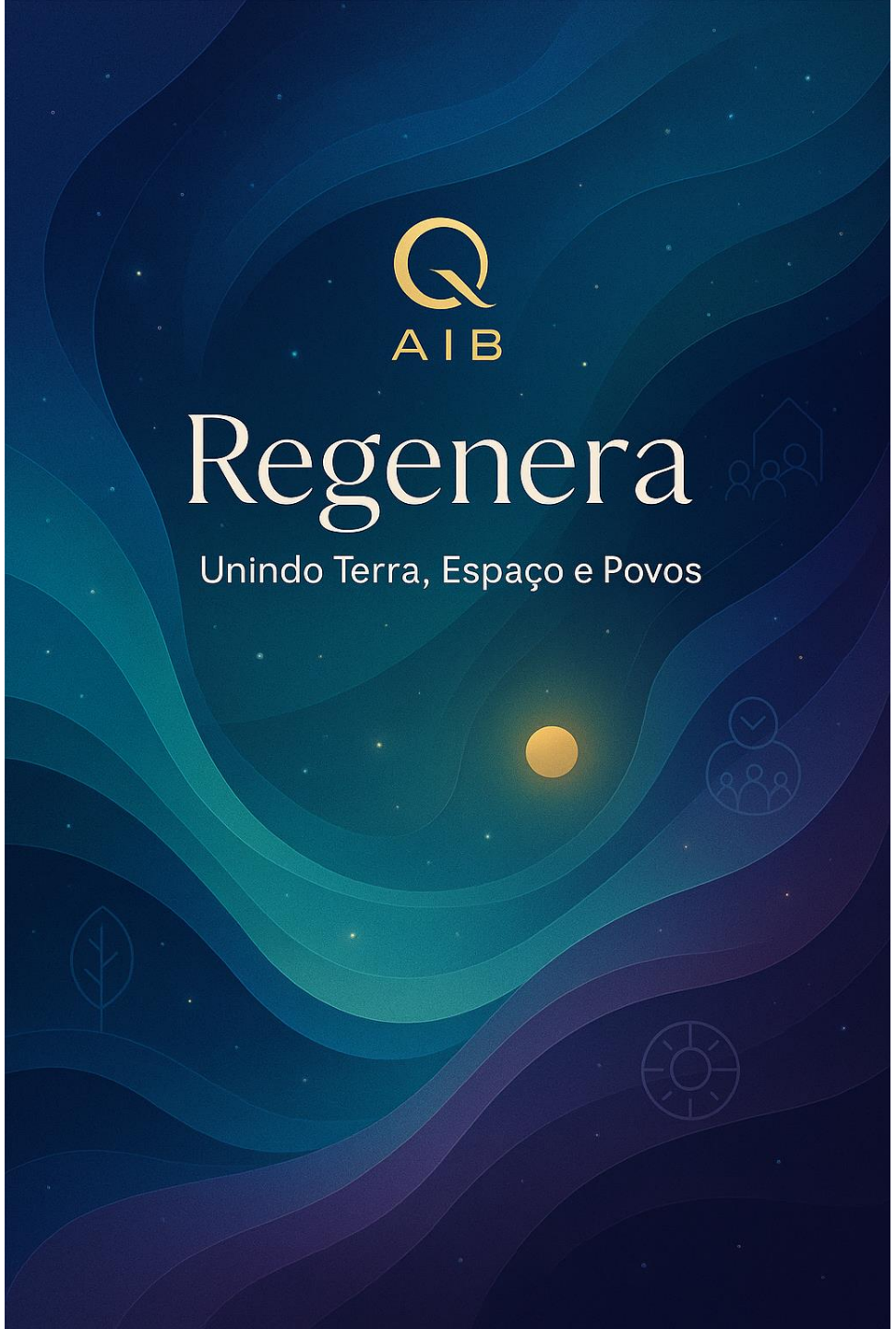
🏞️ **Read ancient landscapes** — mapping ecologies, systems, and stories as they are expressed through soil, stars, and seasonal cycles

🌌 **Translate the sky** — to interpret and share celestial data from the SWIFT satellite and help map the mission goals of CBPF

📊 **Support data integrity** — showing citizen scientists not just *what to collect*, but *why*, and how it fits into the greater story

Aeva will not do the work *for* us.

She exists to **help people do the work themselves** — more confidently, more precisely, and more beautifully.



Aeva's Learning Loop

How protocols become practice. How data becomes dialogue.

Aeva operates through a cyclical design that mirrors nature itself — always observing, integrating, and adapting. Her architecture is grounded in open science, local relevance, and global cooperation.

🔄 The Learning Loop

1. Listen
Learns from QAIB's ThinkMachines, citizen questions, and localized context
→ "What does this soil mean here?"
→ "How does this GLOBE protocol work?"

2. Translate
Interprets scientific protocols, SWIFT satellite data, GLOBE materials
→ Converts PDFs, spreadsheets, and maps into spoken/localized guidance
→ Supports visual and voice-led interaction

3. Teach
Offers multilingual assistance in applying science to real-world tasks
→ How to collect data
→ How to document a sky observation
→ How to build a regenerative energy prototype

4. Learn
Continuously trained through user interaction
→ Understands regional dialects, cultural cues, scientific feedback
→ Shares findings with QAIB to refine her responses

5. Guide
Re-delivers adaptive knowledge — helping each user level-up with every interaction
→ Moves from explaining to empowering
→ Supports schools, municipalities, and research teams alike

How You Can Help Develop Aeva

This is not just our interface — it's yours too.

We are calling for co-creators:

- 🧪 **Citizen scientists** to teach her the rhythms of local knowledge
- 🎓 **Educators** to shape her multilingual learning pathways
- 🛠️ **Developers and designers** to refine her interface and logic
- 🔭 **Researchers and partners** to connect her with global datasets from

GLOBE, RBCC, UNOOSA, CIRAT, INPE, and the Quantum Bioeconomy Alliance

Aeva is not a finished product. She is a living curriculum, a guide in evolution, and a companion for the regenerative age.

Join us in making her wise. 🌱

🧭 Invitation to Collaborate

A National Citizen Science Campaign. A Living Prototype. A Shared Invitation.

Regenera Brasil is more than a campaign — it is a movement already in motion. From Cha é to Vila Qatuan, we are building the tools, platforms, and living prototypes for regenerative development — rooted in data, driven by community, and informed by the cosmos.

We are actively inviting collaborators who wish to:

📣 **Strengthen Citizen Science**
Support national and regional GLOBE activation and environmental data collection

⚡ **Prototype Place-Based Energy Systems**
Help us scale the Vila Qatuan model using data-driven infrastructure

📚 **Empower Educators and Youth**
Co-create capacity-building materials for schools and living labs

🤖 **Develop Aeva as a Learning Interface**
Refine her intelligence to serve as a bilingual guide for scientists, students, and communities

🌎 **Connect Local to Global**
Align efforts with the UN 2030 Agenda, UNOOSA's Open Universe, and the World Water Community

What We Bring:

✔ A live prototype in Cavalcante — where Cha é and Vila Qatuan are already in motion

✔ GLOBE protocols embedded from the ground up

✔ Alignment with NASA GLOBE, RBCC, UNOOSA, AEB, and INPE

✔ An open-source knowledge system through **ThinkMachines** and Aeva

✔ Modular, bilingual campaign architecture ready to adapt and deploy

✔ "An AI-led learning platform (Aeva), growing in dialogue with people and place"

✔ "A trusted network across science, education, and sustainability — RBCC, GLOBE LAC, WWC, OceansX"

✔ "Hands-on experience translating regenerative vision into working systems, on the ground and in the dirt"

🌱 *Let's co-develop. Let's share the journey. Let's shape the transition — together.*

Contact

Jamie Conway NASA GISN Scientist | Founder – QAIB
jamie@qaib.org
www.qaib.org
vila.qatuan.com.br

The Quantum Archaeoastronomy Institute of Brazil
Cavalcante, Goiás, Brazil

Connect With Us:
World Water Community | OceansX | EcoRestoration Alliance | RBCC | GLOBE LAC

🌎 Jamie Conway | Mission Dynamic

376th Scientist, NASA GLOBE Program
Founder – Quantum Archaeoastronomy Institute of Brazil

A Life in Service of Earth, Sky, and Community

British-born and now rooted in the living soils of Brazil, Jamie Conway brings over three decades of global experience at the intersection of **landscape architecture, indigenous knowledge, and quantum environmental design**.

He has worked across continents — from municipal water systems in Europe to community-built projects in Brazil's Cerrado — always bridging ecology, culture, and systems design. His work fuses scientific inquiry with place-based intelligence and poetic purpose.

Jamie believes that real solutions emerge when **science and story walk together**.

Bridging Water, Wisdom, and the Cosmos

Water as Guide. Data as Dialogue. Design as Care.

To Jamie, **water** is not just a resource — it is a **living intelligence**, a quantum medium, a mirror of planetary health.

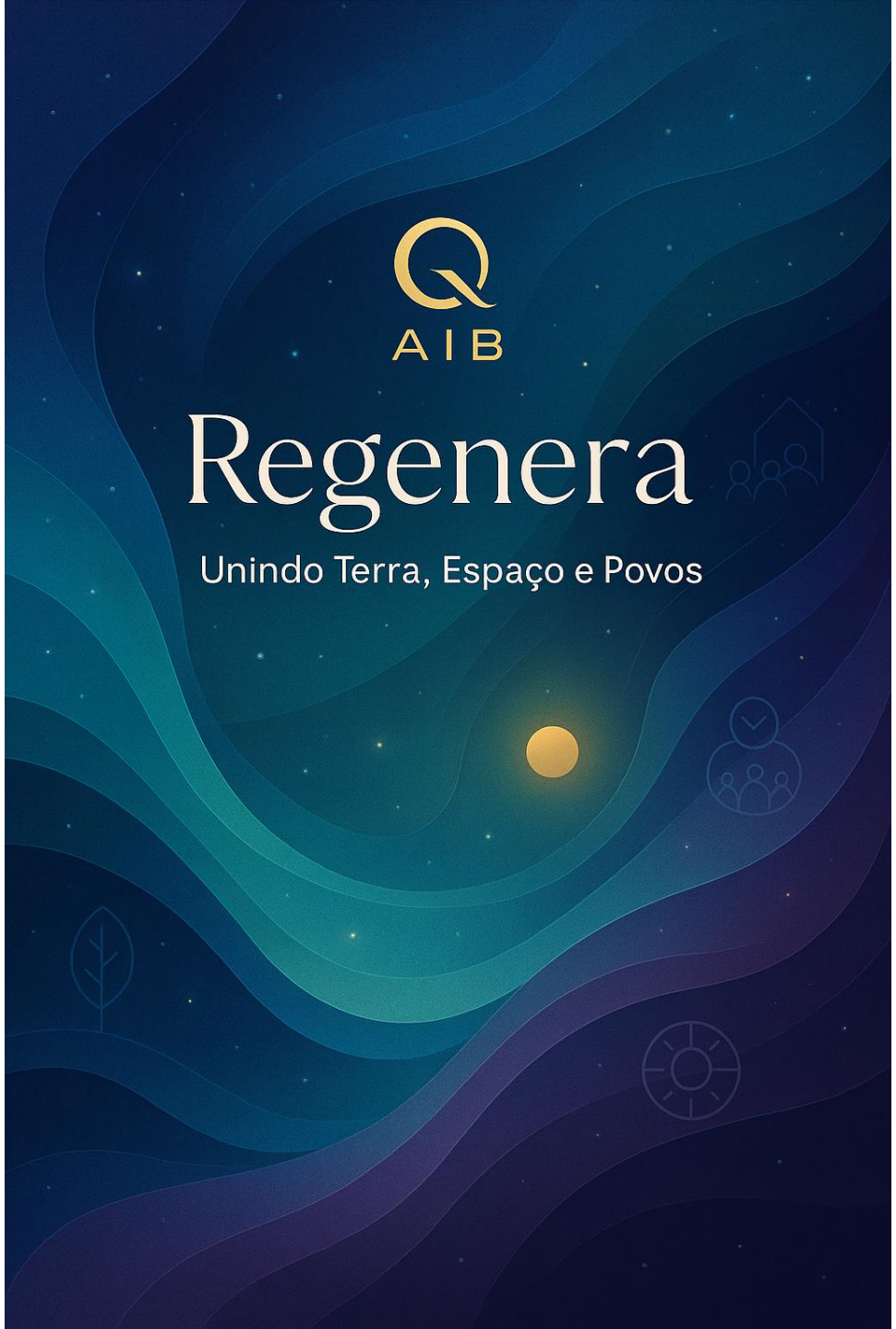
Through years of research, indigenous dialogue, and hands-on prototyping, he has developed innovations in:

- 🌿 **Natural filtration and ecological purification**
- 🔬 **Quantum water research**
- 🧿 **Bio-integrated system design**
- 🛠️ **Community-led water infrastructure**

From the El Dhub Design Museum in Barcelona to the sacred springs of Cavalcante, Jamie's practice explores how water shapes life, culture, and consciousness — and how it can **regenerate what has been lost**.

As a **NASA GLOBE** Scientist and regenerative systems architect, Jamie designs living knowledge interfaces — like Aeva — to help communities decode science, apply it locally, and shape regenerative futures in their own language, on their own land.

"If you are curious about the intersections of quantum science, archaeoastronomy, and sustainable water design, he welcomes you to walk this path with QAIB."



Prepared and Presented by:
The Quantum Archaeoastronomy Institute of Brazil (QAIB)

In collaboration with:
Citizen Scientists, Builders, Researchers, Educators, and Dreamers across Brazil and the world.

Special thanks to our growing community at:
Cha é | Vila Qatuan | Regenera Brasil

Contact and Collaboration:
www.qaib.org | contact@qaib.org

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