aryam

ARYAM ADAPTIVE & REGENERATIVE SOLUTIONS

IMPACT REPORT
2024

A report that reflects our purpose and commitment

AGENDA

1. **Our purpose**
2. **The first impact report**
3. **Accelerating the agroecological transition**
   - **upya connect -** Amplifying the movement by facilitating access to knowledge
   - **upya pulse -** Supporting the actors of the agroecological transition at each stage of their journey
   - **upya chat -** The first generative AI dedicated to agroecology
4. **Financing a just and inclusive transition**
5. **Protecting marine resources**
6. **Diversity in the team's DNA**
7. **Let's talk about our values**
   - Our three commitments for a responsible, frugal and inclusive use of digital technologies
   - A certain vision of the role of technology

OUR PURPOSE

ARYAM was born out of the threefold belief that another path, that of a regenerative economy, is possible, that this path will only be successful if it is deeply inclusive and leaves no one behind, and that technology can help build that better and sustainable future if it is driven by purpose.

With these convictions and our expertise, we have set ourselves the mission of putting data and artificial intelligence at the service of the social and environmental agenda and as a « raison d'être » to generate a positive social and environmental impact.

This raison d'être is materialized through our status as an « impact company » within the meaning of Article 1835 of the Civil Code.
Its implementation has been defined as follows in our statutes:

"Our objective is to accelerate measures to adapt to the consequences of climate change and the degradation of biodiversity and to promote a regenerative economy, respectful of the planet's boundaries and people essential needs."

Our mission is articulated around various areas of intervention, in particular:

Agroecology

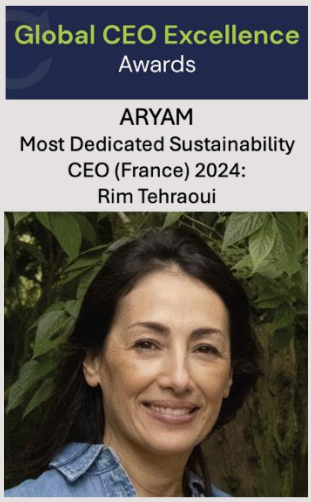
Preservation of biodiversity and fishery resources

Waste recovery and the circular economy

OUR FIRST IMPACT REPORT

"Our commitment to put digital technology and AI at the service of society and the environment is reflected in our statutes as much as it infiltrates our daily activities.
The search for impact is therefore at the heart of our model, our products and our services. »

Rim Tehraoui, Founder & CEO



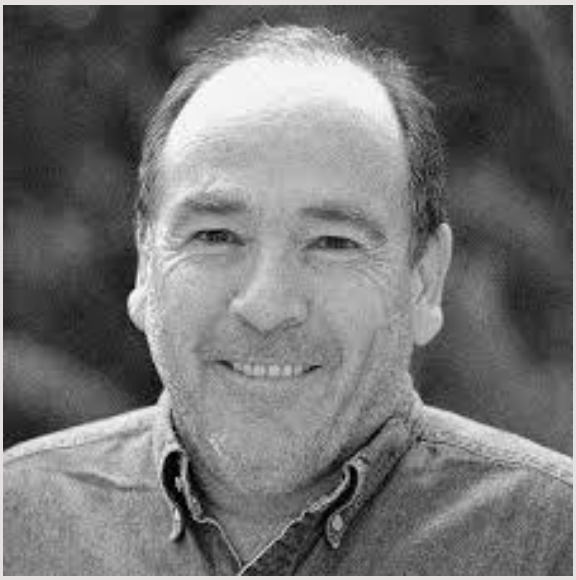
This is our first impact report since the creation of ARYAM in 2023. It is not obvious to measure our impact with such a small history, but the exercise is no less interesting and virtuous!

At this start of our trajectory, it is never too early to confront our vision and our achievements as they are reflected in our products, services and business model and ensure their constant alignment with our values.

This is what we strive to illustrate in this report through concrete examples while also highlighting how we are fully contributing to 6 of the Goals enshrined in the United Nations Agenda for Sustainable Development (SDGs).

ACCELERATING THE AGRECOLOGICAL TRANSITION

Industrial agricultural practices, by prioritizing short-term yields, have left one-third of arable land degraded and reduced global agricultural productivity by 23 percent. At the same time, the current agri-food system is responsible for 25 to 35 per cent of global greenhouse gas emissions and 68 per cent of the decline in mammal, bird, fish, reptile and amphibian populations since 1970.
With a steadily growing global population, the demand for food is expected to increase by 60% by 2050. This pressure will exacerbate soil degradation, biodiversity loss and greenhouse gas emissions, making current agriculture less and less viable.



« « We're seeing that everywhere studies have been done on the impacts of climatic events, [...], monocultures are the first to go. Polycultural systems, agroforestry systems, diversified farming systems that small farmers have are the ones that are resilient, and the ones that resist the impact and the ones that recover faster from the impact. »
»

Miguel Altieri, "Why is agroecology the solution to hunger and food security?", 2012.

The agroecological transition offers an integrated response to these challenges by relying on sustainable practices, such as agroforestry, conservation of living soils, diversification and crop rotation. These approaches make it possible to restore ecosystems and biodiversity, sequester carbon, improve resilience to climate change and guarantee food security while promoting local knowledge and respecting the specificities of territories.

While agroecology is on the rise, its practice is far from being the norm and engaging in such a transition is a complex exercise, requiring decades of conventional agronomic knowledge to be set aside and accepting to move from a model of control to a model of continuous adaptation where we must compose with the living.

At ARYAM, we believe that the key to truly sustainable agriculture lies in the integration of practices, adaptability to farmers' needs, and the balance between global standards and local realities. Through this vision, we are developing solutions that are both innovative and inclusive, ensuring a regenerative future for agriculture and the environment.

OUR IMPACT

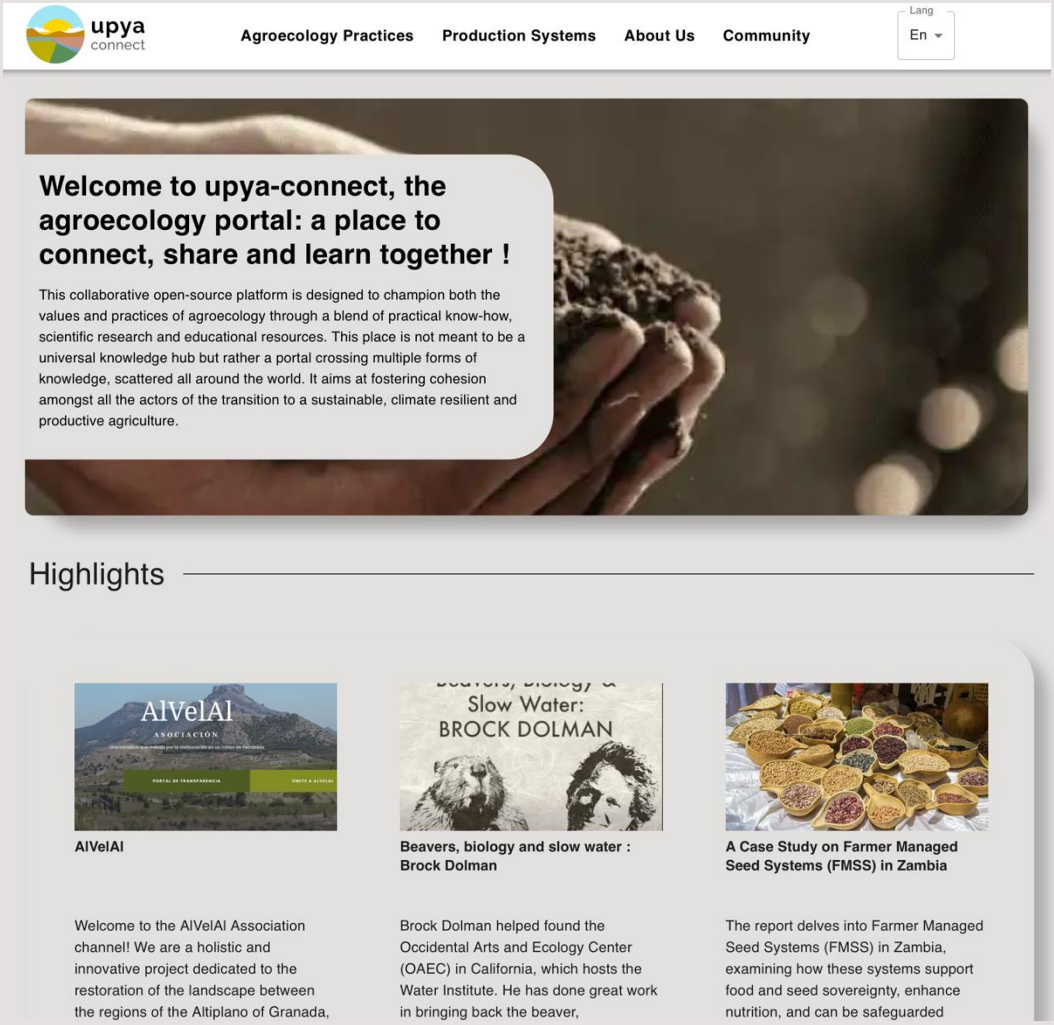
Upya connect - Amplifying the movement by facilitating access to knowledge

In 2024, we launched upya connect, an open-source portal, available in 4 languages (FR, EN, SP, AR) aimed at facilitating access for farmers, technical advisors, researchers and all stakeholders in the agroecological transition, to a wide range of technical, scientific and educational resources.

632	134	478	76
Technical factsheets	Research articles	Field testimonies	Source countries across the 5 continents

Through this platform, our goal is to inspire, emulate, and support the adoption of sustainable, resilient and productive practices.

By sourcing best practices from all over the world, we aim to promote a mutual transfer of technologies and know-how. While the Global North is increasingly interested in the concept of regenerative agriculture, the Global South can also value its ancestral experience in innovative and resilient techniques, adapted to contexts with scarce resources and under strong environmental pressure, thus offering precious lessons to the rest of the world.



OUR IMPACT

Upya Pulse - Supporting the actors of the agroecological transition at each stage of their journey

"Let us plant trees, then the roots of our future will sink into the ground and a canopy of hope will rise to the sky»

Wangari Mata Maathai, Prix Nobel de la Paix, 2014.

This is the objective of upya pulse, our platform at the service of the transition. upya pulse makes it possible to operationalize end-to-end agroecological projects by providing technical and decision-making support as well as impact measurement and monitoring tools.

In 2024, we actively contributed to the genesis of the project **TACHJIR** in Morocco, the first large-scale agroforestry project, combining innovation and R&D with ambitious environmental and socio-economic objectives for 2030.

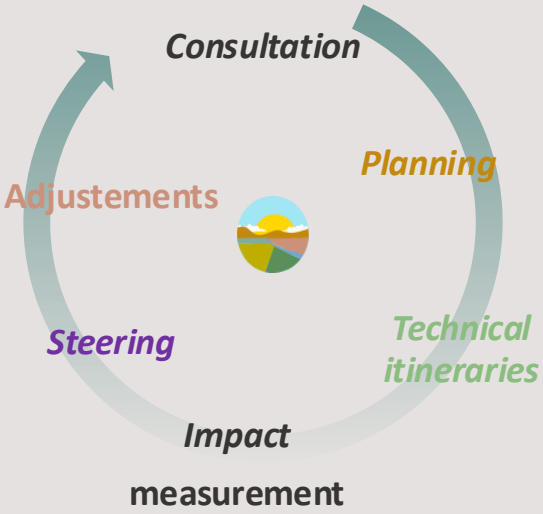
500 000
Hectares in agroforestry systems

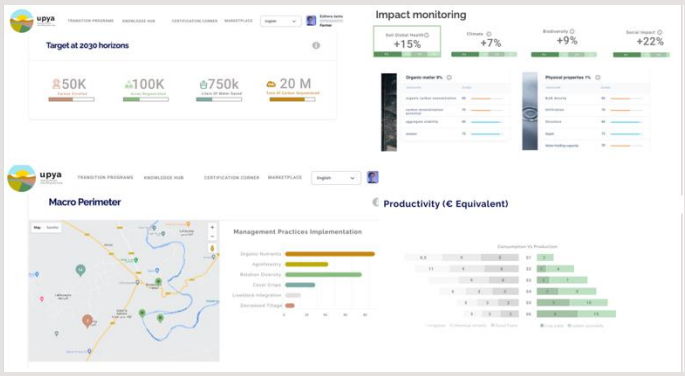
100 000
Supported farmers

50M+
Trees planted

Increased
biomass produced, resistance to water stress and carbon sequestration

Our approach combines technology with a purposefully farmer-centric approach through inclusive consultation workshops and ongoing technical support throughout the project.





The contributions of data and AI will make it possible to process the data collected in situ or via sensors and satellites to measure and manage impacts.

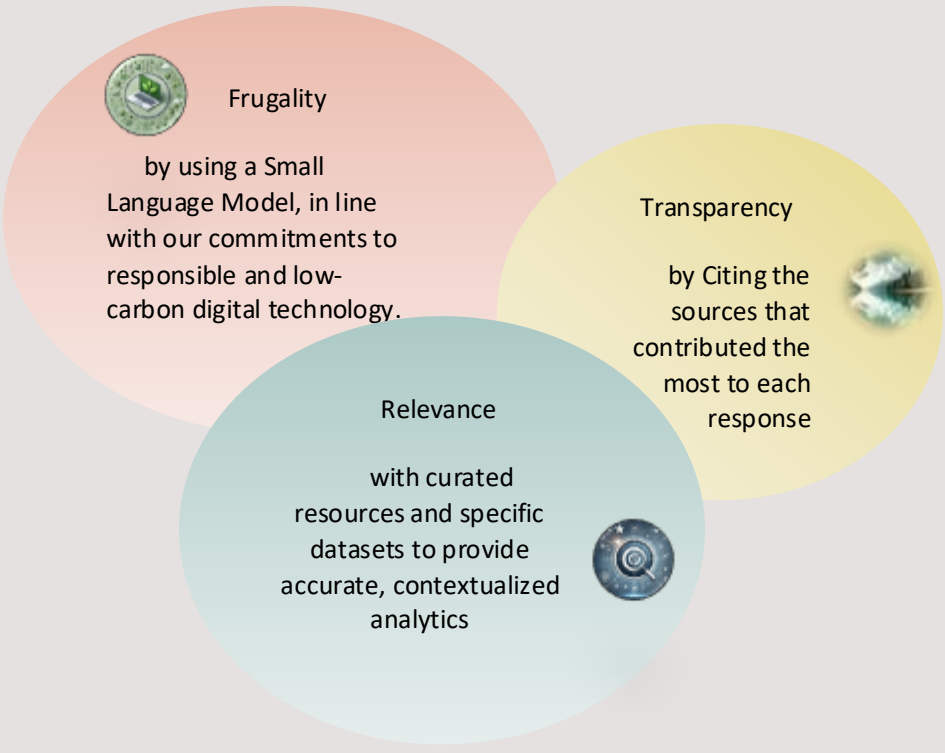
OUR IMPACT

UpyaChat, the first generative AI dedicated to agroecology

Agroecology is characterized by a unique blend of scientific innovations and indigenous know-how, sometimes ancestral.

While AI is not intended to replace this expertise, it can facilitate and guide access to relevant resources and, above all, identify patterns in successful regenerative practices across geographies, thus allowing their adaptation and replication.

This is the objective of UpyaChat, the generative AI that we have developed to support farmers and their technical advisors. Enhanced through Retrieval Augmented Generation based on a unique set of qualified resources combining the best of research and field practices, UpyaChat not only processes large volumes of data, but also transforms it into concrete recommendations adapted to local realities.



FINANCING A JUST AND INCLUSIVE TRANSITION

Despite the growing acknowledgement of the urgency and magnitude of the climate crisis, finance flows for adaptation to its impacts remain notoriously insufficient and unevenly distributed, limiting the ability of the most vulnerable communities to cope with it. In Europe, only 2.7% of agricultural funds are dedicated to it, and about 20% worldwide.
To address these gaps, it is essential to increase funding, develop streamlined access mechanisms, and actively involve local people in the planning and implementation of adaptation initiatives.

Microfinance has traditionally played an important and successful role in supporting smallholder producers. It remains a major distribution lever as long as it is channelled towards virtuous and sustainable agricultural practices.

JuST Institute
Climate, Biodiversity & Inclusive Finance

"I It is of key importance to raise awareness and build capacities of inclusive financial service providers on climate and biodiversity risks and opportunities. Equipped with these new skills these institutions can accompany smallholder farmers to adapt to climate change and preserve ecosystems, as well as ensure their livelihoods. In the JuST Institute in 2024 we have been training 52 inclusive financial service providers in 32 countries through Latin America and Caribbean, Africa, Asia and Europe."

Davide Forcella, JuST Institute Director

In order to materialize our objective of contributing to a transition that leaves no one behind, we have set up a partnership with the JuST Institute in 2023. JuST Institute is an NGO dedicated to catalyzing the development of climate, biodiversity, and inclusive finance markets. Its goal is to promote climate resilience, biodiversity conservation and socio-economic inclusion, especially for smallholder farmers and rural communities.

OUR IMPACT

By supporting the JuST Institue in the development of digital tools dedicated to the training of field agents and inclusive financial service providers, we are helping to strengthen their capacities in terms of understanding and analysing risks and opportunities related to climate and biodiversity. This will hopefully help channel funding towards projects that provide positive impact in these areas.

52
Microfinance institutions

32
Countries in Latin America, Africa, the Caribbean, Asia and Europe

This initiative illustrates our commitment to promoting sustainable transitions that integrate social, environmental and economic considerations, ensuring a just transition for all actors involved.

PROTECTING MARINE RESOURCES

Within only a few decades, fish and crustacean populations have dramatically collapsed. Fisheries have been identified by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) as the primary cause of decline in ocean biodiversity.

The ocean, which absorbs 20 to 30% of our CO2 emissions and more than 90% of the heat generated by our activities, is overheating and suffering the full force of the erosion of biodiversity.

«We must consider fishing as a privilege and not as a right. Marine life is a public good that should benefit both society and nature and should not be the subject of a race for resources driven by private gain»,

Callum Roberts, Professor of Marine Conservation at the University of Exeter in the United Kingdom.

Born in the wake of the Paris Agreement, recognizing the importance of the integrity of marine ecosystems in the response to climate change, the Blue Belt initiative participates to the international dynamic of strengthening coherence between the fight against climate change, the fight against the collapse of biodiversity and the fight against hunger and poverty, to achieve the Goals enshrined in the United Nations Agenda for Sustainable Development (SDGs) by 2030.

Targeting coastal zones, a priority area generating more than 85% of the world's fish production, the objective of this initiative is to set up a true belt of food security, preservation of biodiversity, and fight against the effects of climate change.

In this context, the collection and maintenance of high-quality coastal and oceanic observations and the valuation of this mine of data via multiple use cases represent a strategic and priority challenge for the achievement of these objectives.

OUR IMPACT

Since 2023, we have been supporting the National Institute for Fisheries Research, a key player in the Blue Belt Initiative, in the use of AI and analytical methods to promote a sustainable blue economy.

«All human beings depend, directly or indirectly, on the oceans and cryosphere».

IPCC Special Report on the Ocean and Cryosphere (2019)

Setting up robust foundations:

- ✓ Definition of an AI strategy anchored in the strategic objectives of the INRH and the Blue Belt Initiative
- ✓ Organization of acculturation and skills development
- ✓ Setting up a data governance foundation
- ✓ Mapping of priority AI use cases
- ✓ Definition of the technical stack to ensure their deployment
- ✓ Establishment of technical and academic partnerships

"Companies have tons and tons of data, but [success] is not about accumulating data, it's about data management and insights."

— Prashanth Southekal, Author in Business Analytics, Professor, Director of the Data for Business Performance Institute

Deployment of first use cases:

- ✓ Leveraging sensor, beacon and satellite data with machine learning to protect juvenile species and combat illegal fishing
- ✓ Use of Generative AI to accelerate and improve scientific production and democratize access to it.

DIVERSITY IN THE TEAM'S DNA

At Aryam, we strongly believe that diversity is much more than a value. Our ability to reflect the diversity of the society of which we are a part, is a factor of innovation and efficiency.
By bringing together talent from diverse backgrounds, skills and perspectives, we create an environment rich in ideas and creative solutions. Whether it's cultural diversity, gender, academic or professional background, each unique voice contributes to enriching our projects and better meeting the needs of our clients and the communities we work with.

A multidisciplinary approach

The combination of skills in data, AI, environmental risk management and change management is a strategic and unique strength of our team.
This synergy of expertise allows us to provide innovative solutions through advanced digital tools, facilitate the adoption of these innovations by guiding stakeholders through transition pathways, minimizing resistance and ensuring sustainable impact. We are thus able to offer an integrated, innovative, adaptable and sustainable transformation.

- ✓ A plural expertise
- ✓ 4 different nationalities
- ✓ Multiple backgrounds from agricultural engineering to data science and inclusive finance.

This diversity is not limited to our internal teams. It also extends to our collaborations with local and international partners, as well as to the communities involved in our projects. By incorporating these multiple perspectives from the design stage, we ensure that our solutions are inclusive, responsive and innovative. For us, diversity is not just a mindset, but an essential strategy to address the complex challenges we face and build a resilient and sustainable future.

LET'S TALK ABOUT OUR VALUES

Digital, data and AI are among the strategic pillars of our value proposition. They are at the heart of all our services and solutions. However, we are not unaware of their environmental impact in a context where the exponential rise of generative AI is putting us on trajectories that are difficult to sustain. This is why we are committed to integrating ecodesign principles into our development cycles as much as possible, as evidenced by the carbon rating of the upya connect platform.

OUR THREE COMMITMENTS FOR A RESPONSIBLE, FRUGAL AND INCLUSIVE USE OF DIGITAL TECHNOLOGIES:

1

Fit for purpose

We reserve the most energy-intensive technologies for use cases that justify it and whose environmental and/or social cost/benefit analysis is largely positive

2

Eco-conception by design

We comply with the best eco-design standards to reduce our products' environmental footprint and improve accessibility including in places with low-speed connection, even if it means sacrificing a little aesthetics...

3

Small is beautiful

As much as possible, we favour the use of open-source AI "small language models" that we specialize to make them relevant and efficient

A CERTAIN VISION OF THE ROLE OF TECHNOLOGY

After the spectacular eruption of generative AI and perhaps at the dawn of the beginnings of Artificial General Intelligence, the question is whether these formidable capabilities will make us prosperous beyond our wildest dreams or whether they will mean the enslavement of human beings to super-intelligent AIs. It is therefore important to move away from a posture of fascination and learn to position ourselves vis-à-vis AI and to use it positively, for the benefit of humans.

« Our technology, our machines, is part of our humanity. We created them to extend ourselves, and that is what is unique about human beings ».

Ray Kurzweil, computer scientist, author.

Far from using AI for large-scale automation even when this use makes little sense, we are convinced that AI is above all a formidable information technology. Whether in its predictive or generative form, it has an unrivalled ability to ingest, process and make sense of the ocean of available data.

Our vision is that the main added value of AI is to provide useful information to humans, as a tool for empowering, improving and expanding our capabilities. Our challenge is to put this formidable tool at the service of the causes that drive us.

Thank you to all of you, customers, partners, supporters, employees, for your trust.