Impulso
Verde
Kuaspue
Management
Report
2023

Our Major Impulses in 2023

Indigenous Association of Women Entrepreneurs, Cumbal, Nariño

1. Strengthening the Impulso Verde Nursery Network: With the aim of contributing to the production of native plant material, Impulso Verde has strengthened 16 community organizations. Comprised of 70% women, this network has been fundamental for sustainable development and social cohesion in the region.

2. Reforestation with over 1.2 million native trees: Through the community nursery network, more than 130 native tree species have been produced and planted in Nariño. This effort not only contributes to the recovery of local ecosystems but also actively involves 200 families in environmental protection.

Planting in 9 municipalities of Nariño, creating a new green corridor.

Workshop with boys and girls from the French Lycée in Cali.

3. Raising awareness about biodiversity and forests: Through the 'My Friends the Trees' program, Impulso Verde has raised awareness among 5,400 children and young people about the importance of biodiversity and forest conservation, fostering environmental consciousness from an early age.

Editorial

Inauguration of the Impulso Verde Development and Well-being Center, 2023.

The year 2023 was undoubtedly a period of great progress for the Impulso Verde Foundation. It was a year in which we also consolidated our role as leaders in biodiversity protection and ecosystem restoration.

Every action we undertook not only reflects our commitment to nature but also strengthens strategic alliances with key stakeholders, including companies seeking to comply with national regulations and assume true social and environmental responsibility.

During this time, we also expanded our network of community nurseries in Colombia, with 15 in the department of Nariño and one more in Valle del Cauca, bringing the total to 16 nurseries in operation. These spaces are not only biodiversity engines but also represent technical training scenarios for communities, guiding training modules in agroecological practices, socio-organizational management, and economic tools. This strengthening has been key to ensuring the sustainability of local initiatives and their ability to collaborate with other sectors.

The creation of our brand "Nativa" has also been a fundamental step in promoting green businesses that we have managed to consolidate with the network communities.

Additionally, we continue to promote environmental education through the "My Friends the Trees" project. With workshops in Nariño and Valle del Cauca, we mobilized children and young people in the crucial task of protecting our forests. These actions

reinforce the importance of raising awareness and building a culture of respect and harmony with nature.

Finally, we clearly see that landscape and forest restoration, especially in Nariño, represents an opportunity not only to conserve our biodiversity but also to attract companies and new funders seeking to integrate sustainability into their business models, consistent with national regulations and their social responsibility policies. We invite all companies that wish to align their growth with the well-being of their employees and the planet to join this collective effort for a greener and more conscious future.

Antoine Gérigné
President and Founder Impulso Verde Kuaspue Foundation

Impulso Verde Kuaspue Foundation

Who are we?

We are a Franco-Colombian NGO based in Cali, whose mission is founded on the restoration and protection of forests and biodiversity. We work with peasant and indigenous communities in ecosystem restoration and environmental protection processes, which has earned us special recognition in France and Colombia.

Since 2016, we have been working to protect the ecosystems of the departments of Nariño and Valle del Cauca, whose services are irreplaceable for humanity and all species that depend on them. We know that these ecosystems are at risk of disappearing if we do not act.

Our approach encompasses three main strategic lines:

1. **Ecosystem restoration and conservation:** network of community nurseries, restoration with native trees, and implementation of agroecological and silvopastoral systems.
2. **Development of green businesses**: community beekeeping, shagras, and transformation of aromatic and medicinal plants into cosmetic and artisanal products, marketed through our brand Nativa by Impulso Verde.
3. **Environmental education**: raising awareness about the importance of forests and their biodiversity through the "My Friends the Trees" program and other workshops, aimed at companies and educational institutions, held at the Impulso Verde Development and Well-being Center in Cali, which includes a nursery and a geodesic dome.

Creating a new green corridor, Nariño

Chapter 1: Ecosystem Restoration

The reforestation program aims to preserve two crucial ecosystems: the high Andean forest and the páramos of Nariño, the most biodiverse mountain ecosystems on the planet that supply more than 60% of Colombia's drinking water; as well as the humid sub-Andean forest of the Farallones de Cali, Valle del Cauca.

1.1. Impulso Verde Nursery Network

No. of nurseries:	**16**
New nursery:	1 / Planting Life Peasant Association
No. Of members with inclusion:	200 members, 70% women who produce native trees of more than 130 species.

The Impulso Verde nursery network connects 16 community associations in Nariño and has an inventory of 256,108 plants of 76 different species, counted until the end of December. With a focus on collaboration and cooperation, diversity continues to increase thanks to the collaboration and exchange of seeds between nurseries, allowing for a wide variety of species available, thus strengthening the capacity for

environmental restoration and biodiversity promotion in the region.

In June 2023, the Plantando Vida Peasant Association, located in the "Azonales" páramos of Santa Isabel in Pasto, joined the nursery network. The goal of this association is to restore a unique ecosystem affected by deforestation resulting from coal extraction. The area is home to threatened species such as the Andean bear, Colombian pine, wax palm, and various orchids.

Impulso Verde promoted the creation of this association with former coal miners, demonstrating that it is possible to generate sustainable income while preserving the ecosystem.

In 2024, Impulso Verde will continue the botanical inventory of the species present in the nurseries, in collaboration with academia and the practical guide on native species of the region, which also includes appropriate propagation methods.

Map of the location of the Impulso Verde nursery network

The Impulso Verde nursery network is made up of the following community associations:

1	**Association Pumamaki Indigenous Agroecology, Guachucal Municipality**
2	Association Agroecológica Indígena Sinchimaki, Municipality of Cumbal
3	Association Agroforestry of Aldanenses Women, municipality of Aldana
4	Association Agroecológica Manantial de Vida, Municipality of Potosí
5	Association Indígena de la Mujer Emprendedora, Municipality of Cumbal
6	Foundation Tejiendo Caminos hacia el Buenvivir, Municipality of Yascual
7	Association Laguna Chiltazol, Municipality of Sapuyes
8	Association El Chalguar, Municipality of Pupiales
9	Association Ecoturagro, Municipality of Pasto
10	Association Tulpas Ambientales, Municipality of Córdoba
11	Association Las Iglesias, Municipality of Pasto
12	Association La Tulpa, Municipality of Consaca
13	Association Agropecuaria Emprendimiento Mutualista de Ancuya, Municipality of Ancuya
14	Foundation indígena Yakupacha, Municipality of Puerres
15	Association de Productores Agropecuarios Progresar SC, Municipality of Buesaco
16	Association Campesina Plantando Vida, municipio de Pasto

Indigenous Association of Women Entrepreneurs, Cumbal, Nariño

1.2. Technical Training, Socio-Organizational Support, and Knowledge Exchanges

Indicator	Variable
Total trainings	120
Exchange tours	2
Participants	996 (70% women and 30% men)
Gender equity	High female participation
Youth participation	56 children and young people

In 2023, a training plan was implemented based on the results of a diagnosis conducted using social mapping, focused on the comprehensive technical management of native forest species, under an agroecological and clean production approach. The trainings included on-site technical assistance, field practices, specialized talks, and the use of methodologies such as "farmer to farmer." The main objective was to equip beneficiaries with tools to identify production problems and propose solutions.

The training plan was carried out through the development of 21 modules covering topics such as the selection and germination of native seeds, substrate treatment, biofertilizer production, installation of vermicomposters, propagation of mycorrhizae and other microorganisms. The workshops enabled the sustainable production of native trees and were complemented by the creation of 15 technical sheets, distributed to the associations to capitalize on the information.

Impulso Verde also organized monthly knowledge exchanges between nurseries, fostering mutual learning, improving internal organization, and production practices.

In the same dynamic, a sensitization kit was developed for tree beneficiaries, addressing the importance of live fences in terms of ecosystem services and the identification of native species. The material also supported the work of the nurseries in their areas of influence.

Monthly exchanges of knowledge between nurseries in Nariño.

Community nursery, Nariño

Sowing in Cumbal, Nariño

1.3. Tree Planting for Restoration

Exceeding the expected goals, in 2023 Impulso Verde surpassed the production and planting target, reaching 241,011 trees in the department of Nariño. With a survival rate of 65% over 3 years, whether due to climatic conditions and/or the commitment of the beneficiaries, the plantings focused on the restoration of rural landscapes through live fences, protection of water sources, and reforestation of watersheds. The community nursery network accompanied the process, with the support and supervision of the Impulso Verde technical team.

Red de viveros Impulso Verde, Nariño

1.4. Geolocation

Currently, Impulso Verde uses a geovisor that allows visualization of all plantings carried out by its nursery network. This geolocation process is carried out in collaboration with local communities, who receive training to collect field data. Young people and adults participate in the georeferencing of planted plots, sending the information to the Foundation for processing and validation. Data collection is carried out using mobile applications such as Wikiloc and KoboToolbox, and the data is processed with QGIS before being integrated into the geovisor.

Regarding the tool, Impulso Verde faces new challenges in terms of georeferencing tree plantations. Organizing a database with the provided information, automating the collection, processing, and validation processes, developing more accessible platforms for both the associations and the Impulso Verde team, are part of the analysis resulting from the 2023 experience. The purpose of establishing this challenge is to enable the analysis of plantation information to be properly georeferenced using geospatial technologies.

1.5. Tree Planting Campaigns

Indicators	
Trees	241.011
Beneficiaries	411
Places	18 municipalities of Nariño, such as: Aldana, Buesaco, Carlosama, Contadeo, Córdoba, Cumbal, Funes, Guachucal, Gualmatán, Gualtarilla, Iles, Imues, Ipiales, Ospina, Pasto , Potosí, Pupiales, Tuquerres, among others; and in the Farallones de Cali, Valle del Cauca.

Since 2021, Impulso Verde has collaborated with the Social Pastoral of Ipiales to organize tree planting days or "sembratones."

Below is a description of the scheme employed:

1. **Identification of locations and beneficiaries:** The Social Pastoral convenes associations and groups interested in receiving trees.
2. **Site visits:** Impulso Verde and the Social Pastoral visit the proposed sites, validate the delivery, and raise awareness among beneficiaries about tree care.
3. **Tree delivery:** Impulso Verde and the associations collaborate on the logistics of transporting and distributing the plant material.
4. **Planting day**: The plantings are carried out on nearby dates, involving families and communities in the reforestation effort.

1.6. Establishment of the Silvopastoral System

Promoting sustainable livestock farming through the implementation of Silvopastoral Systems (SPS), as a productive and environmentally responsible alternative, is the initiative's objective. The Nariño region, the second-largest dairy basin in Colombia with more than 43,000 cattle farmers, needs to adopt such systems, motivated by their interest in integrating trees as a strategy for climate change mitigation and adaptation without affecting the region's productivity.

1.6.1. Dairy Silvopastoral System

Training for cattle ranchers, Nariño

Indicators:	
No. hectares implemented	226
No. of farms implemented	102
No. of trees planted	78.625
No. of trainings	18
No. of participants	102

The Impulso Verde Foundation has created favorable conditions for sustainable livestock farming in Nariño, promoting the use of native trees and silvopastoral systems that benefit both the environment and small producers. Thanks to the alliance with local and international institutions, it has trained 212 small and medium producers (37% women) and implemented the program on 226 hectares, with a model adjusted to dairy farming in six municipalities of Nariño, involving 109

dairy producers and planting 78,625 trees. Between July and December, with the support of the Government of Nariño, the University of Nariño, and AVSF, an additional 70 hectares were implemented in Cumbal and Guachucal.

Below is the implementation process:

1. Selection of beneficiaries committed to sustainable conversion.
2. Training through 5 sessions on environmental, productive, and agroecological benefits.
3. Diagnosis of pastures to adjust the model.
4. Delivery of inputs such as trees and materials for planting in the pastures.
5. Implementation of a model SSP on a farm.
6. Geolocation and annual monitoring for five years.

Results in 2023

- 16 community nurseries with 201 beneficiaries.
- 102 dairy producers implemented SSP on their farms.
- 411 beneficiaries with the planting of 241,011 trees (an average of 586 trees per owner).

In 2023, 193 training sessions were held to strengthen the Impulso Verde Nursery Network, covering agroecological production, community organization, and green businesses. Additionally, a seed exchange was organized in Cumbal with over 100 participants to diversify native species.

A key challenge was the increase in morning frosts that impacted the plantations. To mitigate this effect, strategies such as the selection of resistant species, foliar biopreparations, and prolonged adaptation periods for tree individuals were implemented.

Sowing, Farallones de Cali NNP

1.7. Agroecology in Restoration

1.7.1. Ecosystem Restoration in Valle del Cauca

Indicators:	
No. of hectares restored	48
No. of native trees planted	4212
No. of farmers trained in agroecology	49 (59% women)
No. of farmers trained in beekeeping	15 (12 women, 3 men)

Since 2022, Impulso Verde has led the implementation of agroecological crops in the Quebrada Honda village, located within the Key Biodiversity Area (KBA) Farallones de Cali National Natural Park. The initiative, which benefits 16 peasant families, arose in response to the decline in coffee and vegetable production caused by soil fertility loss and the reduction of pollinators. These unfavorable factors are compounded by the use of chemical inputs in ornamental crops, which have affected both local biodiversity and community health.

The success of the initial project and the growing interest of more farmers allowed its expansion in 2023 to the Peñas Blancas and Pueblo Nuevo villages, areas located within the KBA. This phase maintained the objective of promoting forest restoration and

community ecological rehabilitation in the region.

Through coordination with the Community Action Boards and Farallones de Cali National Natural Park as the authority, a training plan in agroecological practices was carried out for 49 farmers. Eight workshops on biopreparations, beekeeping, pollinator conservation, and seedling management were conducted as part of the process, allowing them to establish home gardens, strengthen food security, and contribute to the environmental sustainability of the territory.

Finally, the project also supported the sensitization of children in the beneficiary villages through the "My Friends the Trees" project.

1.7.1.1 Implementation of Gardens

Deforestation in peasant communities is often linked to the need to generate income from agriculture. However, through agroecology training, Impulso Verde has promoted sustainable practices, reducing the negative effects on conservation processes.

In 2023, a total of 49 farmers participated in an agroecology training program to improve their food sovereignty and reduce their environmental impact. Over 8 workshops, they replaced industrial chemicals with agroecological biopreparations and learned to make more than 20 recipes for fertilizers, compost, and natural repellents.

As a result, 37 agroecological gardens were implemented. The first planting cycle began in August with over 13,000 native creole seeds of 15 species, followed by a second cycle in November.

"Since we started the garden project with Impulso Verde, we harvest and eat everything organic, and we barter with our neighbors. We have also convinced our neighbor to join the project." - Oscar Rivera, beneficiary in Peñas Blancas.

1.7.1.2 Restoration with Native Tree Planting

In the KBA Farallones de Cali National Natural Park, 10 beneficiaries participated in the planting of over 4,000 native trees to improve soil fertility, conserve water resources, and strengthen biodiversity, especially the presence of pollinators. This action contributed to the rehabilitation of 10 hectares of sub-Andean forest and its ecological connectivity.

As part of the process, 520 trees were planted during the tree planting campaign organized by Impulso Verde at the El Espinal farm, with the participation of 61 people. The event, which included transportation and supplies for the attendees, promoted environmental awareness and the recovery of forests and wetlands.

Additionally, enrichment plantings were carried out in secondary forests and linear plantations for live fences, boundary protection, and stream conservation.

1.7.1.3 Pollinators and the Implementation of Community Beekeeping

Beekeeping, in addition to strengthening the local economy, contributes to forest regulation and biodiversity protection in the Farallones de Cali National Natural Park. Through a pilot project, 12 Apis

mellifera apiaries were installed, promoting pollination and ecological restoration without affecting biodiversity.

It is expected that in 2024, the results of the work carried out will be reflected in the honey harvest, as an alternative income for the beneficiary families and the application of the knowledge and practices applied in the beekeeping production model.

The project was supported by bimonthly visits from the Impulso Verde technical team.

Beekeeping training, Farallones de Cali NNP

1.7.2 Shagras in the Nariño Territory

In 2023, a pilot project was initiated for the rescue and reproduction of native seeds in the department of Nariño, with the aim of strengthening food sovereignty.

Five associations, comprising 65 families, are participating in this process:

- Indigenous Association of Entrepreneurial Women (Cumbal)
- Agroecological Association Sinchimaki (Cumbal)
- Agroecological Association Manantial de Vida (Potosí)
- Association of Aldanense Women (Aldana)
- Cultural and Environmental Association El Chalguar (Pupiales)

In the first stage of the project, more than 60 varieties of native seeds were identified and conserved, including tubers (potato, ulluco, majúa, oca), legumes (broad bean, pea, bean), vegetables, cereals (corn, wheat, barley, quinoa), and cabbages.

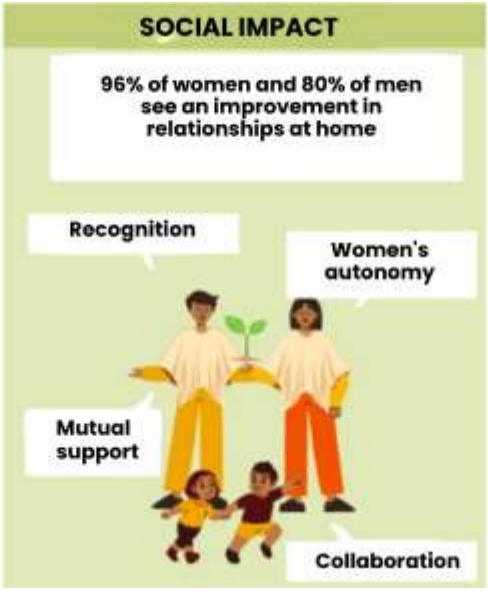
With the Association of Entrepreneurial Women, school plots were implemented for cereal planting, and a production cost analysis was developed to demonstrate the profitability of the crops as an income alternative and their lower environmental impact compared to current agricultural and livestock practices.

Delivery of seeds and plants for shagras, Nariño

Socioeconomic Impacts of Restoration Processes in Nariño

The intervention program for páramos and high Andean forests has been strengthened with biomonitoring, the expansion of community nurseries, and the promotion of silvopastoralism. In 2023, a study was conducted to evaluate the socioeconomic impact, whose results show the deep-rootedness of restoration processes in the communities: For 67% of respondents, the main motivation for joining the project was to preserve the forests, while 96% of those surveyed stated that the nurseries became spaces of well-being and learning. Among the findings, 76% of families reported consuming agroecological products from their shagras, strengthening autonomy and social cohesion.

These findings confirm that restoration protects ecosystems and promotes community well-being.



Transformation of plants into cosmetics, Nariño

Chapter 2: Green Businesses

The Impulso Verde Foundation works with peasant and indigenous communities in Nariño to develop sustainable economic alternatives that promote environmental conservation and social well-being. Through the green business line, beekeeping and the transformation of aromatic and medicinal plants are promoted, generating income and strengthening food security. These initiatives contribute to biodiversity conservation, revitalize ancestral practices such as shagras, and promote intergenerational learning among communities.

2.1. Transformation of Aromatic Plants into Cosmetic Products

Indicators	
No. of Products	9
No. of trainings	7 trainings/ 11 technical accompaniments of production processes

As part of community economic strengthening, five associations in Nariño (Sinchimaki, Manantial de Vida, El Chalguar, Mujer Emprendedora, and AgroTuktu) received support in two strategic lines: food and cosmetics. Beekeeping, shagras, and cereal cultivation were promoted, while in cosmetics, the transformation of medicinal plants into products such as oils and soaps was encouraged.

Although chamomile and calendula are the most commonly used species for cosmetic processing, in

2023 new soaps were made with native species such as laurel, matico, and nettle. The Sinchimaki Association led the production and commercialization of cosmetics, with a 54% growth compared to 2022.

2.2. Sustainable Beekeeping

Indicators:	
kg of honey produced	270kg
Products developed	Honey, Wax, Pollen, Propolis, Mead, Chocolates filled with honey

In the department of Nariño, Impulso Verde provides technical support to four associations for the production of all derivatives of beekeeping activities: Manantial de Vida in the municipality of Potosí; El Chalguar in the municipality of Pupailes; Sinchimaki in the municipality of Cumbal; and AgroTúktu in the municipality of Puerres.

With technical advice from a beekeeper with over 30 years of experience, the associations receive training and guidance on apiary management and evolution, the proper way to extract products and process each one, but especially on the care and protection of pollinators as guarantors of the environmental preservation process. Each month, the beekeeper visits the different apiaries to evaluate the state of the hives and make recommendations.

In this work in Nariño, it is worth highlighting the story of AgroTúktu, the latest organization linked through Impulso Verde's work that joined the beekeeping project in 2023. It is made up of five men, all members of the Civil Defense of the municipality of Puerres. Their idea to participate in the project arose from the constant calls they received to remove hives or swarms that settled in risk areas. Initially, their procedure consisted of incinerating the bees. However, aware of the importance of these insects for the ecosystem, they decided to change their approach, building hives to capture the bees and relocate them to safer areas away from the community.

On the other hand, in the department of Valle during 2023, a group of 12 women from three villages in the Farallones de Cali National Natural Park received training through six workshops on apiary management and beekeeping techniques.

As a complementary part of this work, 12 hives were installed and are reviewed monthly by the Impulso Verde beekeeper, whose intention is to strengthen their practices: general hive inspection, disease control and preventive applications, queen

recognition, food preparation, propolis, nectar, and honey harvest, frame addition, etc.

Impulso Verde's work was further strengthened by the planting of melliferous seeds and plants around the hives to enhance the bees' environment. The first honey harvests are expected in early 2024.

Visit of the apiary by Sinchimaki, Nariño

Factors Influencing Honey Production:

Bees can search for their resources within a radius of up to 2 kilometers, which is why the acquisition of beekeeping products is influenced by various environmental variables such as the availability of nectar, pollen, and propolis, generally from vegetation, influenced by climatic conditions such as temperature and precipitation.

2.3. Recovery and Transformation of Traditional Cereals

Indicators:	
No. of recovered cereals	4
No. of women benefited	42
No. of trainings	6

In 2023, a process of evaluation and identification of a new productive line was initiated with the aim of strengthening the food security and sovereignty of the network families, diversifying their economic income, and reducing the environmental impact of conventional agriculture. Within this analysis, the production of cereals such as wheat, barley, quinoa, and corn was considered.

After a year of work, it was confirmed that wheat and barley have high potential to develop a sustainable economic system for the families of the Agroecological Association of Entrepreneurial Women in the Boyera village, municipality of Cumbal. As a result, 42 women have benefited from the implementation of a training program, and the recovery of four cereal species was achieved, demonstrating the positive impact of this initiative.

Calendula harvesting in Sinchimaki, Nariño

Transformation of plants into soap from Sinchimaki, Nariño

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2.4. Creation of the Nativa Brand

In addition to the support we provide to associations with product commercialization, established through the labels or trade names each has consolidated, Impulso Verde has decided to standardize this process with the creation of "Nativa Impulso Verde." With this brand, which meets the conditions of being a white label because it does not benefit any particular entity, we seek to give visibility to the organizations involved in the process and thus promote products that advocate for biodiversity conservation.

Nativa was created based on two key principles:

1. Ensuring that the network associations and other allies respect the natural cycles of their raw materials and do not generate overexploitation.
2. Ensuring fair prices in commercialization processes, seeking a balance between manufacturing costs and equitable income for families, considering that these aim to guarantee quality of life.

My Friends the Trees, Nariño

Chapter 3: Environmental Awareness

3.1. Project "My Friends the Trees"

Indicators:	
No. of workshops	115
No. of children sensitized	2505
No. of trained youth facilitators	20
No. of municipalities	9

"My Friends the Trees" is an environmental education project aimed at raising awareness among children and young people about the importance of ecosystems and forests, with the goal of helping to reduce deforestation. The project has been implemented in Nariño since 2021 with the support of various entities such as Pastoral Social, the National Network of Youth for the Environment, and the Youth Council.

In the "My Friends the Trees" workshops, both in Cali and the department of Nariño, more than 2,505 children were sensitized about the different parts of a tree, the ecosystem, and the negative impacts of human activities on forests, as well as measures that can be taken to reduce the effects of poor daily practices. This year, we conducted practical activities on how to plant and care for a seed.

3.1.1. Support Network for French Associations (STAFE)

Indicators:	
No. of workshops	54
No. of children sensitized	1145
No. of trained youth facilitators	1
No. of municipalities	3

The STAFE project, implemented by the French Ministry of Foreign Affairs, supported the development of the "My Friends the Trees" workshop in 2023, involving three French Lycées in Colombia: Cali, Pereira, and Bogotá. It also facilitated the construction of the Impulso Verde Geodesic Dome at Lycée Français Paul Valéry in Cali.

Through various sessions, 1,145 children aged 6 to 11 (corresponding to levels CP to CM2 in France) were sensitized. Each workshop was tailored to the children's age and the social dynamics they interact with.

Gradually, the workshop was enriched with new tools and learning methodologies, better adapted thanks to the experience gained throughout the year.

Students of the Lycée Français discovering the Dome, Cali

3.2. Installation of the New Impulso Verde Development Center

Students of the Lycée Français discovering the Geodesic Dome, Cali

The Impulso Verde Foundation and Lycée Français Paul Valéry in Cali signed an agreement in April 2022 to allocate land for the construction of a Geodesic Dome. In 2023, the project was consolidated with the erection of the structure, characterized by its hemispherical geometric shape.

The results in terms of spaces suitable for awareness processes will continue to be consolidated in 2024 with the construction of a Pedagogical Productive Nursery, also planned to be installed at Lycée Français Paul Valéry in Cali. The initiative from Impulso Verde has the following purposes:

1. To become a recognized place that raises awareness about environmental challenges through training and/or workshops for children or the general public; to promote fundraising with local companies, aiming at reforesting the department.

2. To promote the propagation of native seedlings of the dry tropical forest, an endangered forest ecosystem (Colombia has only 8% of its original surface). This activity would create a suitable scenario for restoration actions in Valle del Cauca, especially in Cali.

3.2.1. Dome Construction

Construction of the geodesic dome began in April 2023 after an exhaustive phase of land study and structure design. Due to the soil composition, especially the presence of expansive clays, it was determined that reinforced concrete foundations were necessary to ensure the stability of the construction.

The dome is composed of interconnected triangles forming a three-dimensional network that provides resistance and stability to the structure. The design also achieves energy efficiency by incorporating windows that allow sunlight to enter and optimizing

spaces by not requiring columns or other structural support elements.

To ensure quality and compliance with standards, the construction exercise was supported by an expert who helped consolidate the project within the identified timelines and proposed standards. The process ultimately met all expectations.

Impulso Verde Geodesic and Environmental Dome, Cali

3.2.2. Dome Inauguration

In December 2023, the Geodesic and Environmental Dome was inaugurated with the presence of parents and students from Lycée Français Paul Valéry in Cali, in a day filled with educational and cultural activities. The event featured a unique "Music of Plants" concert, demonstrating the advantages of plant electrophysiology.

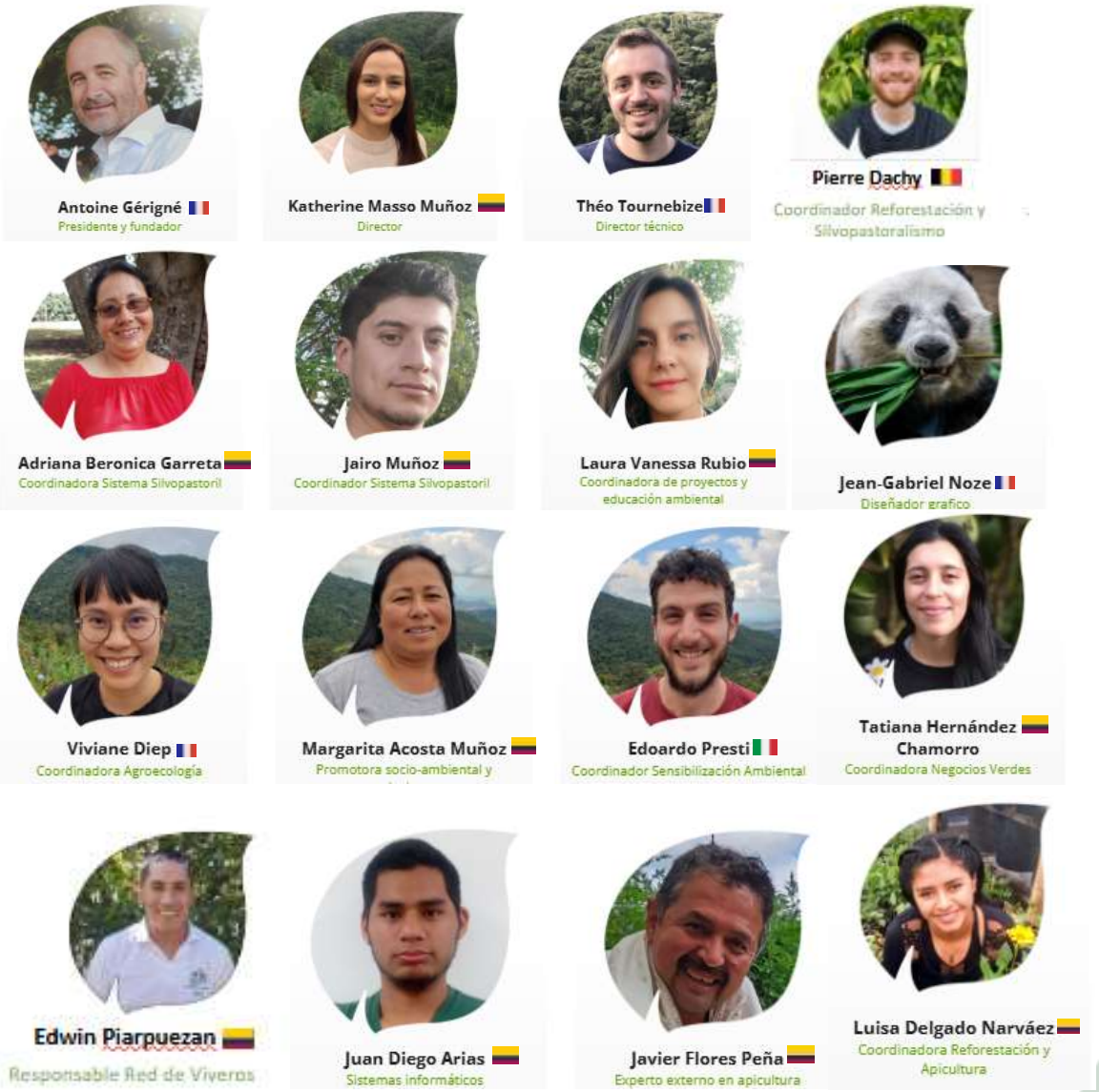
Interactive environmental workshops were also promoted during the event to raise community awareness about environmental care.

Impulso Verde Geodesic and Environmental Dome, Cali

Chapter 4: Together We Are the Impulso Verde of Colombia

4.1. Impulso Verde Kuaspe Team

Impulso Verde is a multidisciplinary and multicultural team. As of December 31, 2023, the organization comprised 16 people with professional backgrounds in biology, engineering, economics, animal science, business administration, among other fields. Below are the faces and roles of the members of the Impulso Verde team:



4.2. The Impulso Verde Nursery Network

The Impulso Verde family also includes the Nursery Network, which consists of 16 community organizations of farmers and indigenous people in Nariño. It is important to highlight that this work with the associations involves 200 families, with 70% of leadership roles held by women. This network collaborates with local communities to restore landscapes, reforest watersheds, and establish silvopastoral systems.

Impulso Verde
Kuaspue

4.3. Technical and Institutional Allies

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