

## Sowing the future: Transformation and progress in rural communities of Cariamanga

### *Sembrando futuro: Transformación y progreso en las comunidades rurales de Cariamanga*

Date of receipt: 2024-06-18 Date of acceptance: 2025-01-16 Date of publication: 2025-05-10

**Blanca Priscila Maldonado Pacheco<sup>1</sup>**

Pontificia Universidad Católica del Ecuador, Ecuador

[bpmaldonado@puce.edu.ec](mailto:bpmaldonado@puce.edu.ec)

<https://orcid.org/0000-0002-5497-595X>

**Majo Carrasco-Tenezaca<sup>2</sup>**

Pontificia Universidad Católica del Ecuador, Ecuador

[mjcarrasco@puce.edu.ec](mailto:mjcarrasco@puce.edu.ec)

<https://orcid.org/0000-0003-2548-3320>

### Abstract

The Valle de Gigantes Association, with the support of the Healthy Living Initiative from the Pontifical Catholic University of Ecuador, has participated in training programs and has arranged a food processing mini plant aiming at improving the nutritional status and income of its members. This project contributes to various Sustainable Development Goals (SDGs): poverty eradication, health and wellbeing promotion, gender equality, decent work and economic development, and responsible production and consumption. Participant observation during trainings and production activities, along with focus groups with association members were used as qualitative methodology. Structured surveys analyzed with descriptive statistics were used as quantitative methods. The results showed an increase in the ability of self-management and economic sustainability in the involved

communities and highlighted the importance of academic support and international financial support as key elements in rural development. In conclusion, this project has strengthened the community agency and their economic empowerment. This suggests that projects that aim to create or improve entrepreneurial abilities and interdisciplinary collaboration can be effective in fighting poverty and promoting sustainable economic development in rural areas.

**Keywords:** Rural Development, Community Empowerment, Education and Knowledge Transfer, Sustainable Development Goals

## Resumen

La Asociación Valle de Gigantes con el apoyo de la Iniciativa Vivir Saludable de Pontificia Universidad Católica del Ecuador ha participado en programas de capacitación y ha dispuesto una miniplanta procesadora de alimentos con el objetivo de mejorar el estado nutricional y los ingresos económicos de sus miembros. Este proyecto contribuye varios Objetivos de Desarrollo Sostenible (ODS): erradicación de la pobreza; promoción de la salud y bienestar; igualdad de género; trabajo decente y crecimiento económico; y producción y consumo responsables. La metodología cualitativa utilizada incluyó observación de los participantes durante capacitaciones, talleres y ciclos de producción; y grupos focales con los miembros de la asociación. La metodología cuantitativa consistió en encuestas estructuradas con análisis estadístico descriptivo. Los resultados mostraron un incremento en la capacidad de autogestión y sostenibilidad económica de las comunidades involucradas y resaltaron la colaboración académica y el apoyo financiero internacional como factores clave para el desarrollo rural. En conclusión, el proyecto ha fortalecido la capacidad comunitaria y el empoderamiento económico de las comunidades, sugiriendo que las intervenciones basadas en la formación empresarial y la colaboración interdisciplinaria pueden ser eficaces para combatir la pobreza y fomentar el desarrollo económico sostenible en áreas rurales.

**Palabras clave:** Desarrollo Rural, Empoderamiento Comunitario, Educación y Transferencia de Conocimiento, Objetivos de Desarrollo Sostenible

## Introduction

The Valle de Gigantes Association (AVG) is a project that is part of the Healthy Living Initiative (IVS). The IVS has more than fifteen years of experience as a research group at the Pontifical Catholic University of Ecuador (PUCE) and is one of the university's flagship projects in the fields of action research, outreach, and applied research. This initiative began with the goal of creating a sustainable solution for preventing the transmission of Chagas disease. It later expanded to include proposals aimed at improving quality of life in the health sector and, finally, a concrete proposal focused on the equitable inclusion of gender through sustainable food production to enhance economic income.

The direct beneficiaries of the project are approximately 60 people who are members of the AVG, located in Bellamaria, Chaquizhca, and Guara, in the Chile parish of Calvas canton, along with their families. Additionally, there are indirect beneficiaries, such as families with productive gardens that contribute to the association's production with their surplus yield.

In 2023, the Pontifical Catholic University of Ecuador participated in the call for micro-projects under the "Strengthening Entrepreneurial Initiatives in Ecuadorian Universities" (FSPI) program, issued by the French Embassy. Three PUCE projects were selected, including the "Valle de Gigantes Association: Economic Development for Three Rural Communities in Southern Ecuador" project.

The Valle de Gigantes Association makes a significant contribution to several Sustainable Development Goals (SDGs) (CEPAL, 2018). Regarding SDG 1: No Poverty, AVG directly works to improve and diversify the economic income of participating families through the creation of micro-enterprises and training programs. This initiative not only seeks to increase the financial resources of these communities but also aims to reduce multidimensional poverty by strengthening skills and knowledge that are passed down across generations. These efforts ensure that families can generate income sustainably, contributing to a lasting improvement in their quality of life and the region's economic stability.

Regarding SDG 3: Good Health and Well-being, AVG promotes the nutritional value of traditional regional foods, improving family diets and enhancing overall well-being. This initiative not only increases access to healthier foods but also preserves local food heritage, ensuring that future generations continue beneficial dietary practices.

Concerning SDG 5: Gender Equality, the project plays a key role in empowering women, as 78.6% of the association's members are women. These women actively participate in all association activities, strengthening their economic and social autonomy, providing greater opportunities for leadership and personal development, and fostering gender equity within their communities.

Regarding SDG 8: Decent Work and Economic Growth, AVG promotes an equitable and community-driven work environment, deeply respecting local customs. By involving all community members, it fosters inclusive and sustainable local economic growth, based on social justice and respect for traditions, reinforcing long-term economic development.



Finally, SDG 12: Responsible Consumption and Production is reflected in AVG's sustainable agricultural practices. These practices respect the natural cycles of the land and are based on ancestral knowledge passed down through generations. The association's promotion of organic production ensures that its activities do not harm the environment, fostering a harmonious relationship with nature and contributing to long-term sustainability.

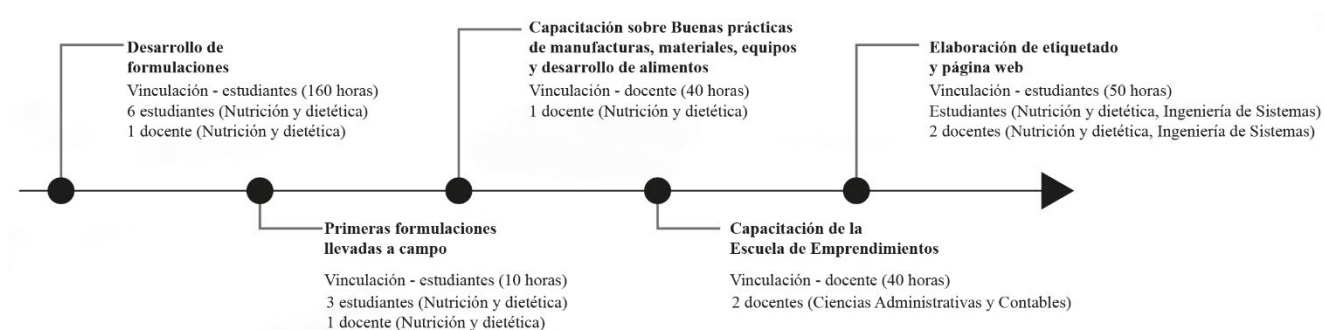
The objective of this article is to assess, among members of the Valle de Gigantes Association, the impact of both theoretical and practical training workshops, as well as the provision of equipment, on their development as a group and their empowerment at the business level.

## Methodology

A mixed methodology was employed, combining qualitative and quantitative approaches to gain a comprehensive understanding of the project's impact on the Valle de Gigantes Association (AVG). The qualitative methodology captured participants' perceptions, experiences, and behavioral changes, allowing for an understanding of the subjective impact of implemented actions, such as equipment provision, member empowerment, and teamwork dynamics. The qualitative techniques used included participant observation during training sessions and production activities; semi-structured interviews exploring perceptions of equipment provision and the sense of empowerment; and focus groups that delved into shared experiences, emphasizing teamwork and relationships with local entrepreneurs.

Simultaneously, a quantitative methodology was applied to measure the project's scope and concrete achievements. Structured surveys were conducted to assess attendance and objective fulfillment, recording an 80% participation rate in training sessions on product development and best practices for food handling. Additionally, the development of 20 formulations and three products ready for sanitary notification was documented. Finally, a descriptive statistical analysis was carried out to calculate percentages and averages related to attendance and satisfaction, providing a clear quantification of the project's impact.

The activities were based on a knowledge transfer methodology, in which faculty and students trained association members in topics such as good manufacturing practices, food development, machinery and equipment use, as well as business models and personal finance. The hybrid modality allowed for the participation of 90% of AVG members. The research project followed a multidisciplinary approach, involving faculty and students from the fields of Nutrition and Dietetics, Architecture, Business Administration, and Engineering, as well as allied institutions such as the French Embassy, PUCE – Quito, and Ohio University. PUCE contributed through training, formula development, and access to external networks, while the French Embassy financed equipment and seed capital. Meanwhile, Ohio University facilitated staff mobility and organized events to increase AVG's visibility. Additionally, in 2013, it supported the construction of a community center that now serves as an operations hub and houses the small-scale food processing plant. The stages of the knowledge transfer process are described in Figure 1.

**Figure 1***Stages of Knowledge Transfer.*

## Results

### 3.1 Qualitative Results

The main qualitative results were as follows:

**Provision of Equipment and Supplies:** Participants in this project did not have the financial resources to acquire the necessary equipment and supplies for the processing plant. They were provided with equipment for which they are responsible, increasing their sense of empowerment and self-confidence.

**Relationships with Other Local Businesses:** Training from the Entrepreneurship School allowed AVG members to establish relationships with experienced entrepreneurs in this field, helping them project a clear path forward.

**Teamwork:** The training sessions, especially those involving production practices, fostered teamwork and a positive attitude among association members.

### 3.2 Quantitative Results

The main quantitative results include:

80% of participants attended training sessions on product development and best practices for food handling.

Entrepreneurship School training exceeded expectations by 50% since the invitation was directly managed by Valle de Gigantes.

15 AVG members were trained in good food handling practices. This knowledge is applicable at the family level, benefiting a larger number of people.

20 formulations using locally sourced raw materials were developed.

Three products were created with documented processes and requirements for obtaining sanitary notification, allowing for market expansion.

The linkage between universities and rural communities through micro-enterprises can significantly improve the population's living conditions. Knowledge transfer through specific management models—integrating academic activities, research, and volunteer work—helps strengthen local capacities (Palacios, 2022). By fostering collaborative participation in problem recognition and solution development, the project fulfills the three core functions of higher education while emphasizing its focus on knowledge transfer to communities. Teaching is seen as the process of imparting knowledge produced through scientific research, which is fundamental for training professionals who can contribute to society (Hernández, 2019).

Teaching should not be limited to knowledge transmission; it must be deeply connected to research and social outreach, allowing students to apply what they learn to real-world problem-solving. The integration of these fundamental functions enhances professional training competencies (Soledispa-Rodríguez et al., 2021). In the case of the AVG project, efforts were directed toward the specific needs of the community, generating knowledge about the nutritional value of local raw materials and product diversification to improve economic access (Forero-Jiménez, 2019).

International cooperation in rural development projects highlights the importance of community empowerment and capacity building (Monge-Hernández et al., 2020). The AVG project showcases how association members have been empowered in their pursuit of an improved quality of life. The research began with a small group interested in developing a product based on local resources, which then sparked greater interest within the population, leading to job creation and better use of local resources. Training programs help enhance the capabilities of individuals and organizations at the community level, fostering economic and human development (Velázquez-Hernández et al., 2023). The experience gained by AVG members will likely inspire residents from the three communities to join this development initiative and further refine their skills and learning.

Action research plays a vital role in integrating university education with community needs, providing a platform for students to actively participate in productive and social activities. Community projects have a multiplier effect (Cieza et al., 2012) since outreach activities lead to the creation of new development projects, entrepreneurial ventures, and research initiatives through thesis work, reports, and new project proposals. Institutional and technical support is essential for strengthening micro-enterprises. Universities play a crucial role in transferring knowledge to the community (Parwez, 2017), facilitating greater local inclusion and participation in economic development.

Didactic strategies are fundamental for achieving effective learning in rural communities. These strategies should incorporate innovative tools and methods that facilitate better understanding and active participation among community members. In rural settings, where resources and access to technology are limited, it is crucial to implement flexible and locally relevant teaching methods (Herrera Gutiérrez & Villafuerte Álvarez, 2023). By designing teaching-learning strategies tailored to the target population, essential skills and knowledge for improving productivity and income



diversification are strengthened. This not only enhances the self-sufficiency of rural communities but also drives local economic development (Covarrubias Hernández, 2021).

Training in rural environments promotes social cohesion and community empowerment by equipping members with practical skills and relevant knowledge. This facilitates active participation in community decision-making, fostering a sense of belonging and shared responsibility. Training for Valle de Gigantes members was conducted in a hybrid format, with the main training module delivered virtually. Despite the distance between communities, attendance exceeded 80%. As a strategy to encourage participation, WhatsApp groups were created to share motivational messages about training sessions. Distance education using mobile phones and internet access not only facilitates knowledge acquisition but also empowers participants by providing them with the tools needed to engage in an increasingly digital and competitive world (Rodríguez Arce & Juárez Pegueros, 2017).

**Figure 2**

*Photographs of hands-on experiences.*



Entrepreneurship plays a crucial role in the economic and social development of countries. It not only generates employment but also fosters innovation and improves the quality of life of the population. The study of entrepreneurship helps to understand the factors that motivate individuals to create their own businesses, highlighting the importance of education and work experience in shaping entrepreneurial intentions.

In this context, entrepreneurship education becomes a key tool for enhancing individuals' skills and attitudes toward entrepreneurial activities. Furthermore, entrepreneurship drives the creation of new products and services, contributing to economic dynamism and national competitiveness. In the case of AVG, several products were developed as part of community-based enterprises, and participants received training in various areas (Bravo Bravo et al., 2021).

Entrepreneurs not only create new business and job opportunities but also drive innovation, responding to market needs and changes. This dynamism significantly contributes to economic growth, enhancing national competitiveness and promoting sustainable development. Moreover, entrepreneurship encourages the creation and application of knowledge, enabling businesses to adapt and transform in a globalized and constantly evolving environment.

Therefore, it is essential to promote an entrepreneurial culture that integrates innovation and knowledge to tackle the challenges of the 21st century and ensure economic and social well-being.

**Figure 3**

*Products developed during the final phase of the intervention.*



The role of women in entrepreneurship development is a crucial topic encompassing economic, social, and cultural aspects. Women's empowerment in entrepreneurship enables them to develop leadership skills, increase self-confidence, and achieve economic independence. Additionally, these enterprises often focus on sustainability and environmental responsibility, contributing to SDG 12 (Responsible Consumption and Production).

The female role in entrepreneurship is a powerful tool for gender equality and for improving living conditions both locally and globally (Ordoñez-Abril et al., 2021). Women entrepreneurs not only bring ideas and solutions but also promote gender equity and empowerment within communities. Their leadership has a multiplier effect on the well-being of their families and the broader community. Women's participation directly contributes to SDG 5 (Gender Equality), which aims to empower women and girls, fostering social and economic inclusion (García Arteaga et al., 2021). In



the AVG project, 78.6% of the participants are women who actively work in their productive gardens and are the primary suppliers of raw materials for food production.

## Conclusions

The project “Asociación Valle de Gigantes: Economic Development for Three Rural Communities in Southern Ecuador” has demonstrated that sustainable economic development in rural contexts not only depends on the implementation of infrastructure and training but also on deep community participation. Initially, the request for support for the association from the community to the IVS meant that the project originated from the bottom up, which made its importance for the target population implicit. The active participation of the members of Bellamaría, Chaquizhca, and Guara in all phases of the project was key to ensuring the relevance of the interventions and their long-term sustainability. This participatory approach has not only generated a strong sense of ownership and commitment in the communities but has also allowed for adaptation to local changes in climate, economy, and has strengthened social cohesion.

Moreover, one of the most valuable lessons has been the bidirectional transfer of knowledge. The academy, through PUCE, has provided virtual and in-person workshops and training on advanced techniques and theories that have strengthened the productive capabilities of the communities. Students from various fields at PUCE have had the opportunity to participate in the association's activities, from laboratory work in product formulation to active participation in production processes in the field. At the same time, the local knowledge and practical experience of the community members have enriched the academic understanding and motivated the students to create solutions tailored to the specific challenges of these rural areas. Additionally, the experience of the students outside the classroom has been highly enriching for their academic and personal development. This synergy has been essential for overcoming difficulties and maximizing the project's impact, contributing to the achievement of several Sustainable Development Goals (SDGs), especially in the areas of poverty eradication, health, gender equality, decent work, and responsible consumption.

In the future, it will be essential to maintain this collaborative and flexible approach to ensure that the achievements are consolidated and continue benefiting the communities in the long term, promoting their self-sufficiency and resilience in the face of new challenges.



## References

- Bravo Bravo, I. F., Bravo Bravo, M. X., Preciado Ramírez, J. D., y Mendoza Ferrín, M. M. (2021). Educación para el emprendimiento y la intención de emprender. *Revista Economía y Política*, 139–155. <https://doi.org/10.25097/rep.n33.2021.08>
- Cieza, R. I., Muro, M. G., Eirin, M. A., y Arias, R. (2012). Revista Extensión Universidad Nacional de Córdoba. *La Formación de Estudiantes a partir de un Proyecto de Extensión en un Tambo Periurbano de Baja Escala*, 4(2). <https://revistas.unc.edu.ar/index.php/ext/article/view/1378/pdf>
- Covarrubias Hernández, L. Y. (2021). Educación a distancia: Transformación de los aprendizajes. *Telos Revista de Estudios Interdisciplinarios en Ciencias Sociales*, 23(1), 150–160. <https://doi.org/10.36390/telos231.12>
- Forero-Jiménez, M. Y. (2019). Modelo de responsabilidad social universitaria: Una propuesta para las instituciones colombianas. *Revista de Investigación, Desarrollo e Innovación*, 9(2), 249–260. <https://doi.org/10.19053/20278306.v9.n2.2019.9160>
- García Arteaga, V. F., Cruz Coria, E., y Mejía Reyes, C. (2021). Factores que impulsan e inhiben el empoderamiento femenino: Una revisión de literatura. *Revista Reflexiones*, 101(1). <https://doi.org/10.15517/rr.v101i1.43649>
- Hernández, C. R. (2019). Sobre la función social del conocimiento humano mediante la vinculación y transferencia del conocimiento en América Latina. *Revista de la Educación Superior*, 48(189), 121–132. <https://doi.org/10.36857/resu.2020.48.189.7>
- Herrera Gutiérrez, C., y Villafuerte Álvarez, C. A. (2023). Estrategias didácticas en la educación. *Horizontes. Revista de Investigación en Ciencias de la Educación*, 7(28), 758–772. <https://doi.org/10.33996/revistahorizontes.v7i28.552>
- La Agenda 2030 y los Objetivos de Desarrollo Sostenible: Una oportunidad para América Latina y el Caribe*. (2018). Comisión Económica para América Latina y el Caribe (CEPAL). [https://repositorio.cepal.org/bitstream/handle/11362/40155/24/S1801141\\_es.pdf](https://repositorio.cepal.org/bitstream/handle/11362/40155/24/S1801141_es.pdf)
- Monge-Hernández, C., Mena-García, P., Gutiérrez-Miranda, M., Gamboa-Conejo, R., y Céspedes-Araya, M. (2020). Sinergias en los procesos de desarrollo rural de un proyecto de cooperación entre Japón y Costa Rica. *InterSedes*, 21(43), 152–174. <https://doi.org/10.15517/isucr.v21i43.41990>
- Ordoñez-Abril, D. Y., Castillo-López, A. M., y Rodríguez-Bravo, I. M. (2021). Empowerment of women in entrepreneurship and innovation. *Población y Desarrollo*, 27(52), 69–91. <https://doi.org/10.18004/pdf-ce/2076-054x/2021.027.52.069>

- Palacios, P. R. (2022). Modelo de transferencia de conocimiento a comunidades rurales desde el quehacer y formación universitaria en economía: Knowledge transfer model to rural communities from work and university education in economics. *South Florida Journal of Development*, 3(2), 2366–2375. <https://doi.org/10.46932/sfjdv3n2-062>
- Parwez, S. (2017). Community-based entrepreneurship: Evidences from a retail case study. *Journal of Innovation and Entrepreneurship*, 6(1), 14. <https://doi.org/10.1186/s13731-017-0074-z>
- Rodríguez Arce, J., y Juárez Pegueros, J. P. C. (2017). Impacto del m-learning en el proceso de aprendizaje: Habilidades y conocimiento / The Impact Of m-learning On The Learning Process: Skills and Knowledge. *RIDE Revista Iberoamericana para la Investigación y el Desarrollo Educativo*, 8(15), 363–386. <https://doi.org/10.23913/ride.v8i15.303>
- Soledispa-Rodríguez, X. E., Sumba-Bustamante, R. Y., y Yoza-Rodríguez, N. R. (2021). Articulation of the substantive functions of Higher Education and its impact on professional training competencies. 7. <https://dominiodelasciencias.com/ojs/index.php/es/article/view/1753/3494>
- Velázquez-Hernández, J. A., Romero-Zepeda, M., y Martínez-Anaya, A. (2023). Educación comunitaria para el emprendimiento del orégano y la damiana en la comunidad de Camargo. *Puriq*, 5. <https://doi.org/10.37073/puriq.5.501>



Copyright (2025) © Blanca Priscila Maldonado Pacheco; Majo Carrasco-Tenezaca



This text is licensed under a [Creative Commons](#) 4.0 International License.

You are free to Share-copy and redistribute the material in any medium or format-and Adapt the document-remix, transform, and build upon the material-for any purpose, including commercial purposes, provided you comply with the Attribution terms. You must credit the original work appropriately, provide a link to the license, and indicate if changes have been made. You may do so in any reasonable manner, but not in such a way as to suggest that you have the licensor's support or receive it for your use of the work.

[License Summary](#) – [Full text of the license](#)