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Governance structures and corporate governance in production of aguaymanto collective

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The aguaymanto called goldenberry, is a fruit native to Peru, which is produced by hand. Given the international preference for this product, attention was paid to the way it is produced. In northern Peru, in the Cajamarca region, some producers formed the Provincial Association of Ecological Producers of Cajamarca (APPEC). With the constitution of this association, the development and positioning of this business has been successfully achieved. This case study aims to analyze the corporate governance and transaction governance mechanisms implemented in APPEC, in order to understand how they enabled superior design and management in the goldenberry agribusiness subsystem in Peru. The methodology used was the simple case study. The results show that the producers achieved their progress by changing the path dependency and went from working individually to working as a team in the aforementioned association. The organization model and internal structure implemented has achieved the unification and collaboration of the producers, in turn with the other actors involved in the export of goldenberry. Likewise, this model has managed to establish functions and hierarchies for the exchange of decision rights and property rights with the industry and suppliers; successfully adapting and managing to reduce uncertainty and transaction costs. With the formalization of the goldenberry production process, an improvement was introduced in the commercial scenario, increasing exports and optimizing production.

Keywords: Goldenberry, Corporate governance, Collective production, Path dependency.

* 1. Introduction

Goldenberry grows as an almost wild fruit between 1,500 and 3,000 meters above sea level along The Andes Mountain range. This fruit is not widely available in Peru and is generally eaten like a produce fresh (Pierre et al., 2023). In addition, it can be processed in many ways. The most popular form, which gives it a longer shelf life, is as dried fruit. Most of the Peruvian exports are made up of this presentation, while the export of fresh goldenberry is just beginning in Peru (Carbajal et al., 2021).

Starting in the 1990s, small producers working independently and informally made up the majority of cape goldenberry agricultural production in Peru. The techniques for the proper management of the crop were unknown, there was no technology to improve production, the demand of the national or international market was unknown, consumption was irregular and marketing was focused on local markets. Investment incentives were insufficient, resulting in low production, farmers simultaneously cultivated other fruits and vegetables, giving little importance to goldenberry (De-la-Torre, 2020). As a result, there were no incentives for investments, so production and quality were poor, resulting in low income and development for farmers. (Agroeco, 2021).

However, in the early 2000s, the international demand for goldenberry began to increase significantly, both fresh and dried. This change ended more business opportunities, new processing companies emerging, achieving a substantial increase in exports of this fruit (from 1.2 tons in 2004 to 48.1 tons in 2011) (PROMPERU, 2020).

Although this growth and development was strongly related to the increase in international demand, some players in the system adapted their production, strategies, and governance to take advantage of the opportunity. The ability to adapt to shocks is the key phenomenon to understand the economy and the external shock is a constant source of large disturbances (Ordóñez, 2002). The speed and efficiency with which a design can be readjusted largely depends on the characteristics of the group in charge of organizational change (Senesi, 2012).

The idea of strategies and goals to advance a business, as well as the idea of having a shared mission, vision and shared goals, are implicit in collective behavior (Ordóñez, 2002). Coordinated strategic actions can change the characteristics of the competitive environment to the benefit of the group (Zylbersztajn and Miele, 2001). Through cooperation, the actors of the system safeguard and benefit from the highest quality of the final product.

The success of an absorption system is related to commercial, technological, organizational and institutional innovations as a result of the coordination of the various actors in the system, both in terms of strategic actions and transactional activities (Kherallah and Kirsten, 2019). Given the rapid technological advances, the increased demand for more specialized products and the increasing competition in the agri-food industry, regional or local innovation can no longer depend only on the individual company, but must receive more support from the network (Whinston, 2001).

Goldenberry producers realized that they could not increase production by working individually, so they started doing it collectively as a way to adapt to this disruption and have more stocks to sell to manufacturers, the main customers of this product (Williamson, 2002).

The main zone of Peru where goldenberry is produced is the Cajamarca region; this is where its cultivation began with a commercial and symbolic perspective. Several farmers from this region began to work together in the year 2000 to form part of the Provincial Association of Ecological Producers of Cajamarca (APPEC), with the aim of organizing themselves in the production of goldenberry and obtaining a greater quantity of this product to market.

The association agreed to venture into the goldenberry business strategically (Williamson, 2000), which has allowed it to integrate small producers from the Cajamarca region, strengthen collaboration in the production of goldenberry, and coordinate with the export industry, which is its main client (Agroeco, 2021). As a result, the association used a corporate governance model (Williamson, 2002), which is defined as the management structure of an organization and the set of rules, procedures and practices that are implemented in order to increase profits and reduce transaction costs (Whinston, 2001).

* 1. Materials and methods

The research was carried out using case studies tend to focus, given their characteristics, facts and situations in order to address them in depth for their holistic and contextual understanding (Vasilachis et al., 2006). This type of site allows contextualizing and deepening the study of the problem in a delimited universe (Yin, 1994; Lazzarini, 1997). The objectives of carrying out case studies can be: (1) to know the case in depth, (2) existence of special situations, (3) describe a successful organization, (4) explore a universe little studied, among others (Sautú et al. al., 2005). The cases are not representative samples, but experimental theses (Yin (1994), the research questions and the units of analysis should be chosen on purpose, to represent and confront the frontiers of current knowledge of the research topic (Sterns et al., 1998).

The most appropriate unit of analysis for case study research will be the socioeconomic phenomenon that provides the most complete knowledge of the issues and questions of interest (Yin, 1994). In this sense, the method of this research work was a simple case study, with corporate governance and governess structures being the study phenomenon, and taking the impact of corporate governance of collective goldenberry production as the unit of analysis. Cajamarca on governance in transactions with its suppliers and customers.

In addition, the documentary analysis technique was carried out in the investigation, which consists of collecting or producing data from secondary sources that contain the information required to achieve the objectives of the investigation (Hernández et al., 2014). The publications of scientific papers, scientific journals in the agribusiness and related areas, information from Peruvian government agencies, stories such as the National Superintendency of Customs and Tax Administration (SUNAT) and the Ministry of Foreign Trade were provided as secondary sources.

The primary data was collected by conducting interviews with 25 of the members of the association of small producers in the province of Cajamarca, (producers, managers and administrators), which allowed pointing out and reporting some of the theoretical assumptions that were raised in the investigation. The interviews that were carried out were based on the logic and power of the intentional samples that reside in selecting cases rich in information to study them in detail (Patton, 1990). It is considered that between 20 and 30 interviews are enough to saturate the categories (Vasilachis et al. 2006).

* 1. Results and discussion
		1. Analysis of goldenberry business in Cajamarca

The producers of this fruit have worked individually for many years due to the small volume they have to collect. This traditional model, of small farmers working individually, has been the dominant kind of organization in Cajamarca. However, in the year 2000, the culture of collective work began in Peru and developed satisfactorily, gradually encouraging small producers to work together to take advantage of market opportunities. This was promoted, in part, by the government through a set of new laws to implement “agrarian reform”. After the institutional reform, the Peruvian government began to implement laws to continue the “agro-export boom”. For example, the promotion and regularization of the production and export of goldenberry along with other fruits. This has made producers interested in formalizing agricultural production and the law of associations that gave technical and economic support to small associated farmers. On the other hand, Peru signed international agreements and treaties on foreign trade, which allowed generating commercial opportunities for the sale of goldenberry to the United States and the European Union.

At an organizational level, this business has been changing from empirical goldenberry collectors to involved producers, this is how it began to interact with intermediary agents, retail and wholesale companies. The figure 1 shows the main distribution channels of goldenberry in Cajamarca. Until the end of the 1990s, the direct channel was managed, where producers sold in local markets. For the following decade, intermediary agents who collected the goldenberry emerged. On the other hand, when the associations were generated, direct sales channels to retailers and whosalers were also implemented. This is similar to what Xiuping (2022) points out, who carried out an analysis of current business value chains.



*Figure 1: Distribution channels of the goldenberry business in Peru*

At the technological level, it was evidenced that there are no defined varieties in goldenberry, there are only ecotypes that differ in size, color and flavor of the fruit, as well as in the shape of the calyx and shape of the plant (creeping and upright type). In the improvement process, the producers went from empirical and wild management to controlled and technical work. All this is in agreement with what was reported by Lengai et al. (2022) regarding crop improvements. On the other hand, one of the main derived products has been dehydrated by hot air.

INPUT SUPPLIERS

PRODUCER

AGENT

RETAILER

PROCESSING INDUSTRY

Figure 2: Analysis of the transactions of the goldenberry business in Cajamarca

Three main transactions have been carried out by goldenberry producers (figure2), the first interface is with suppliers of inputs (seeds, fertilizers and fertilizers). The frequency of this transaction is low because the producers need the seeds to start cultivating once a year. The specificity of the assets involved is high because the seeds they require are of a specific ecotype and do not have a second alternative use. In many cases, seed suppliers operate opportunistically, generating information asymmetry problems and constantly changing prices. The governance structure is the spot market where there are no relationships of trust between supplier and producer and there are no prior agreements to guarantee the transaction.

The transaction carried out by the producer and the intermediary agent is at a high level of informality, because the collectors have more information than the producers, about the price of goldenberry in the local market, they know the dynamics of the supply in their area of influence and development in the fresh fruit market. The frequency of the transaction is high, the collectors take advantage of the harvest months to gradually buy all the production and the producers have few options to sell due to the small number of collectors that exist, however, they can choose who to sell to. The specificity of the assets involved is high for the temporary type, since it is a highly perishable food due to its high-water content (80%).

Transactions between producers and the processing industry were initially through verbal agreements with producers to mainly establish the price to pay. Transaction frequency is high because manufacturers continuously require fresh goldenberry for processing. The specific assets involved are high considering the perishability of the fruit and its quality as a naturally organic fruit. This is supported by the study by Alves et al., (2022).

* + 1. Corporate governance in collective production of goldenberry

The producers went from producing directly on their small lands empirically, to producing in a specialized way, acquiring goldenberry seeds and generating more stable crops. However, being accustomed to working individually, there were still some difficulties, such as low prices, high uncertainty to sell and heterogeneous production in goldenberry quality, leading to non-compliance with the industry's requirements and as a consequence, the non-sale of the goldenberry. For this reason, the initiative was born, on the part of some producers, to form an association and carry out collective work in the production of golden gooseberries in the Cajamarca region. One of the main associations formed is the provincial association of organic producers APPEC.

In terms of corporate governance, a General Assembly was established, in which the associated farmers participate, who elect a board of directors that will be in charge of making decisions and defining the strategy, as well as defining the issues related to the transactions with suppliers of seeds and fertilizers and industry. The general assembly is the highest authority of the Association. It is made up of all members, who have the right to vote on the resolutions discussed. The decisions made are binding on the general manager, the control manager and his associates. One of its main functions is to approve the Association's strategic plan, the annual operating plan and the budgets presented by the board of directors.

For the exchange of decision rights and the establishment of a corporate governance system, farmers sought leaders to represent them. Two types of leaders were found, those who have a single interest-oriented economic discourse and those who also seek to adopt an explicit defense, which prevailed in the elections. Therefore, the association seeks to enter into a dialogue with the authorities at the local and regional level, thus ensuring the development of projects for agricultural production, but also benefiting the community. All these problems lead to a corporate governance partnership that has allowed farmers to share decision rights with the other stakeholders.

In terms of governance structures, the association changed the transaction scenario. The farmers oriented the transactions to the export industry; and the association acts as an intermediary (agent), leaving aside business with the local market. The new organizational agreement between farmers and input providers is developed with the association as coordinator, who contacts and negotiates with seed providers and manure/fertilizer providers. In the case of the transaction between the industry and the farmer, it is carried out in a context of high demand for this fruit and a growing market opportunity for golden gooseberries through the producers' sales options. The association is related to collectors for the sale of fresh goldenberry, with the artisanal industry for the local market and the dehydrated industry for export.

The formal contract is the predominant governance structure in the transaction with the processing industry, where the conditions of physiological characteristics (specificity of the assets) and the price are pre-established, thus reducing uncertainty. The commitment letter was signed with the representative of the export-oriented company specifying the required conditions, as well as the delivery and the price per kilogram of harvested goldenberry. These contracts are signed annually, which also establishes that the payment to each farmer will be made monthly according to the quantity produced. The exchange of property rights between farmers and buyers is done through purchase notes each time it is collected in cultivation areas. With this purchase note, a volume control is carried out at the same time that it serves as proof that each farmer receives the payment for goldenberry, which generally takes between 30 and 45 days. According to Garrigos and Hidalgo (2012), good corporate governance relationships and innovations are a key factor for business competitiveness.

* 1. Conclusions

Goldenberry business in Cajamarca is in a positive scenario in relation to the foreign market, with the organic dehydrated goldenberry as the main export product. From the diagnosis made, at the institutional level, the individualism of small producers was identified as a path dependency that they maintained for years; this gave rise to information asymmetries that impacted the transaction and transaction cost levels. At a technological level, the agricultural production of goldenberry gradually changed from a wild product to a semi-wild product of low quality and then to an improved production. At the organizational level, the problems for coordination via price that existed between the goldenberry producers with their suppliers and customers were identified. From the analysis of the transactions, there was a high frequency due to the few suppliers and customers, the specificity of the assets involved was medium due to the characteristics of the fruit, and the uncertainty of the transaction was high.

As a consequence of the lack of alignment, there were high transaction costs as a result of recurring opportunistic behavior by the intermediary. Small producers experienced the disturbances, both positive and negative, of globalization and the new international conditions of the goldenberry market; Faced with these forces of modernization, they had collective work as their response and strategy, thus generating a new scenario for the production of goldenberry in the Cajamarca.

The new agrarian institutional environment that exists in Peru offered producers promotions and impulses to improve production conditions, increase the volumes produced, encourage agricultural continuity, and improve their productivity and profitability. In addition, through associative agriculture, goldenberry producers have been able to carry out cooperation and coordination in the chain. In this way, they are integrated, forming the Provincial Association of Organic Producers of Cajamarca (APPEC), generating an innovative model of corporate governance that, in turn, has allowed the board of directors to be awarded the decision rights of small producers, which is used for the transactions with suppliers of seeds, fertilizer and with industrializers as the only client.

In short, APPEC develops a particular corporate governance model which contributed to innovate and consolidate the process of change in the agribusiness subsystem of goldenberry in Cajamarca. Corporate governance will operate decision-making spaces for internal rules of the game, defining decision rights with managers. This in turn made it possible to add new production units, strengthen mutual trust and find effective mechanisms for collective work and transactional governance through the construction of alliances with the different levels of government to strengthen the policies that allowed productive development and rural integrated in these territories.

References

AGROECO. 2021. Mejoramiento de la capacidad productiva y comercial de aguaymanto de la asociación provincial de productores ecológicos de la provincia de Cajamarca. Programa Canadiense de Investigación para la Seguridad Alimentaria (CIFSRF). Cajamarca (Perú).

Alves, L. G. A., Mangioni, G., Rodrigues, F. A., Panzarasa, P., Moreno, Y., 2022, The rise and fall of countries in the global value chains. Scientific Reports, 12, 1–14.

AREX – Asociación comercial de exportadores de Lambayeque. 2013. Perfil comercial de aguaymanto deshidratado. Sierra exportadora. Lambayeque (Perú).

Brito, M. 2007. Gobernanza empresarial: Ética, Responsabilidad Social y Rentabilidad en la "Era Pos-Enrom" Revista Venezolana de Gerencia, vol. 12, núm. 38, abril-junio, 2007, pp. 183-206 Universidad del Zulia Maracaibo, Venezuela.

Carbajal Y, Bonilla H, Siles-Vallejos M, López A. 2021. Citogenética comparativa de Physalis peruviana en tres poblaciones cultivadas de Cajamarca, Perú. Revista peruana de biología 28(2): e20462 (Mayo 2021). doi: http:// dx.doi.org/10.15381/rpb.v28i2.20462

Creswell, J. W., 1998, Qualitative inquiry and research design: Choosing among five traditions. Thousand Oaks, CA: SAGE Publications.

De-la-Torre, M., Avila-George, H., Oblitas, J., Castro, W. 2020. Selection and Fusion of Color Channels for Ripeness Classification of Cape Gooseberry Fruits. In: Mejia, J., Muñoz, M., Rocha, Á., A. Calvo-Manzano, J. (eds) Trends and Applications in Software Engineering. CIMPS 2019. Advances in Intelligent Systems and Computing, vol 1071. Springer, Cham. https://doi.org/10.1007/978-3-030-33547-2\_17

Garrigósa, José A., Nucherab, A., 2012, Governance relations and innovation in the value chain: new paradigms of competitiveness, European Journal of Economics and Business Management, (in Spanish).

Hernández, R., Fernández, C. y Baptista, P. (2014). Research methodology, Mexico D.F., Mexico, (in Spanish).

Kherellah, M. & Kirsten, J. 2019. The New Instituional Economics: Applications for agricultural policy research in developing countries. Markets and Structural Studies Division. International Food Policy Research Institute. Washington D.C. - Estados Unidos.

Lazzarini, S. G., 1997, Estudos de caso para fins de pesquisa: aplicabilidade e limitaçoes do método. In: Farina, E. et al. (Coor). Case Studies in Agribusiness, São Paulo, Brazil, (in Portuguese).

Lengai, G. M. W., Fulano, A.M., Muthomi, J.W., 2022, Improving Access to Export Market for Fresh Vegetables through Reduction of Phytosanitary and Pesticide Residue Constraints. Sustainability, 14.

MINAGRI (Ministerio de agricultura y riego) 2014. Dinámica agropecuaria 2013– 2022. Lima (Perú).

Ordóñez, H. 2010. Aportes metodológicos de estudio e intervención de los agronegocios. Una teoría, tres modelos y tres casos. Paper presentado en la Asociación. Argentina de Economía Agraria. Buenos Aires. Octubre.

Ordóñez, H. 2010. Nueva Economía y Negocios Agroalimentarios. Editorial Facultad de Agronomía. Buenos Aires – Argentina.

Patton, M.Q. 1990. Qualitative Evaluation and Research Methods. (2nd Ed) Newbury Park: Sage Publications

Pierre, P.M.O., Guidolin, A.F., Dos Santos, M., Trevisani, N., Cerutti, P.H. 2023. Origin, evolution and strategies for the genetic improvement of physalis. Biology. Cienc. Rural 53 (7). https://doi.org/10.1590/0103-8478cr20210742

PROMPERÚ (Comisión de promoción del Perú para la exportación y turismo). 2020. Programa nacional de promoción del biocomercio. Departamento de Agro y Agroindustria. Lima (Perú).

PROMPERÚ (Comisión de promoción del Perú para la exportación y turismo). 2020. El proceso de exportación y las oportunidades comerciales para los alimentos. Departamento de Agro y Agroindustria. Lima (Perú).

Sautú, R., Boniolo, P., Dalle, P., Elbert, R., 2005, Methodology Manual: construction of the theoretical framework, formulation of objectives and choice of methodology, Buenos Aires, Argentina, (in Spanish).

Senesi, S. 2012. El capital social como factor de producción en los sistemas de Agronegocios en Argentina. Un análisis comparado de los sistemas aviar, vitivinícola y vacuno. Tesis de Magíster en Agronegocios y Alimentos. Programa de Agronegocios y Alimentos. FAUBA. Buenos Aires – Argentina.

SIICEX 2011. Acuerdos Comerciales del Perú. Ministerio de Comercio Exterior y Turismo. Lima (Perú).

Sterns, J.; Schweikhardt, D. y Peterson, H. 1998. Using case studies as an approach for conducting agribusiness research. In: International Food and Agribusiness Management Review, 1 (3), 311-327.

Vasilachis, I., Ameigeiras, A. R., Chernobilisky, L. B., Giménez, V., Mallimaci, F., Mendizábal, N., y Soneira, A. J., 2006, Qualitative Research Strategies, Barcelona, Spain, (in Spanish).

Velezmoro J. 2004. Perfil de mercado del aguaymanto. Universidad del Pacífico. Lima (Perú).

Whinston, Michael. 2001. “Assessing Property Rights and Transaction-Cost Theories of the Firm.” American Economic Review. May, 91:2, pp. 184–99.

Williamson, Oliver E. 2000. "The New Institutional Economics: Taking Stock, Looking Ahead," Journal of Economic Literature, American Economic Association, vol. 38(3), pages 595-613, September.

Williamson, Oliver, E. 2002. "The Theory of the Firm as Governance Structure: From Choice to Contract." Journal of Economic Perspectives, 16 (3): 171-195.

Xiuping, S., 2022, An Enhanced Value Chain Model Using Regression Analysis Method. International Journal of Emerging Technology and Advanced Engineering, 12, 6, 1443–1457.

Yin, R. 1994. Case Study Research: Design and Methods. Sage Publications, Thousand Oaks, CA.

Zylbersztajn, D. &, M. 2001. Stability of Contracts in the Brazilian Wine. Industry: Improving Quality Attributes Through Chain Coordination. Universidad de San Pablo (Brasil).