



Article

Transforming the Farmer into a Rural Entrepreneur as a Path to Sustainability

Antonio Bliska Júnior ^{1,*}  and Flávia Maria de Mello Bliska ²

¹ Faculty of Agricultural Engineering (FEAGRI), University of Campinas, Av. Cândido Rondon, 501, Campinas 13083-875, Brazil

² Agronomic Institute (IAC), Av. Barão de Itapura, 1481, Campinas 13075-630, Brazil; bliska@iac.sp.gov.br

* Correspondence: bliskajr@unicamp.br; Tel.: +55-19997974710

Abstract: This work presents a tool to support the transformation of the farmer into a rural entrepreneur, raising the level of management of his company and increasing its competitiveness and sustainability in the long term, enabling its growth and not just its survival, but respecting social and environmental factors that permeate agricultural production. This tool, the Management Degree Identification Method—MIGG, will be able to support the elaboration of public policies for the agricultural segment and improve the service provided to rural entrepreneurs by rural extension and scientific and technological research areas. This tool emphasizes the creation and implementation of mechanisms for greater transparency, professionalization and sustainability in agriculture in different geographic regions.

Keywords: sustainable agriculture; rural development; management in agriculture



Citation: Júnior, A.B.; Bliska, F.M.d.M. Transforming the Farmer into a Rural Entrepreneur as a Path to Sustainability. *Agronomy* **2022**, *12*, 898. <https://doi.org/10.3390/agronomy12040898>

Academic Editors: Piotr Prus and Francisco Manzano Agugliaro

Received: 19 January 2022

Accepted: 25 March 2022

Published: 8 April 2022

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2022 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

The concern with quality control and the adoption of good Social, Environmental and Governance (ESG) practices is constantly growing among companies of different sizes and sectors around the world [1,2]. The institution of internal management systems has become vital to maintaining or increasing its competitiveness, with a view to greater customer satisfaction and trust, reducing its internal costs and improving its productivity, image, processes used and its access to new markets. In agriculture, the reality is similar [3], especially because rural entrepreneurs in general do not influence the prices of agricultural inputs or products. Therefore, the internal management mechanisms over which they have control become relevant, from the improvement of processes to the delivery of the product in the destination market.

In addition, according to the guidelines of the 2030 agenda of the Sustainable Development Goals (SDGs) of the United Nations [4], management in rural areas is relevant to the competitiveness and sustainability of value chains. This occurs above all in terms of environmental preservation and natural resources and, especially, in countries where agribusiness plays a relevant role in their respective economies.

Although the use of technology is a key point for the effective sustainability of agriculture and for the survival of the population in different geographic regions, especially through the increase in food production, the implementation of production management systems is essential for the sustainability and competitiveness of long-term agriculture. Management must pay special attention to the rational use of natural resources and the preservation of biodiversity and the fertility of arable land. It should also work for the non-contamination of soil and water sources.

The main inputs used in modern and increasingly intensive agriculture (pesticides, fertilizers and water) contribute to producing more with less. However, on the other hand, it also generates large amounts of waste, especially with the growing use of plastics in the production process. Consequently, a significant example of the importance of management

for agricultural production systems is the need to adopt practices that prioritize, in an economically viable way, the reuse and biodegradability of agricultural plastics, in accordance with the principles of the modern circular economy [5].

An appropriate management is urgent and will define the conditions for agribusiness to reach high levels of development and sustainable growth, given the demands of society and the market worldwide. Examples of this technology are irrigation with PVC and polyethylene pipes; resins for making rigid boxes or flexible containers for harvesting, transporting or retailing; films and screens for protecting crops and harvested products, covering silos, closing greenhouses and nurseries and bagging fruits; and ground cover (mulching). The diffusion of Plasticulture (the term “Plasticulture was conceived in the 1940s to designate the use of plastics in agriculture, at the University of Kentucky, by Prof. EM Emmert, considered The Father of Resistant and Economical Plastic Greenhouses, to replace the usual glass greenhouses, which were popular but costly at the time), in many cases, generates innovations in processes, improving quality, facilitating the introduction of new products on the market, reducing waste and GHG emissions (Greenhouse Gases) and contributing to a reduction in the use of harmful inputs to the environment.

Around the world, agricultural plastics have contributed to increasing production, improving food quality and reducing the ecological footprint of its activities. They allowed the cultivation of vegetables, fruits, flowers, other agricultural products and even fish farming at any time of year, as well as the incorporation of difficult-to-implement technologies in open-field cultivation. A wide range of polymers is used in this modern agriculture: polyethylenes (PE), polypropylene (PP), ethylene-vinyl acetate copolymer (EVA) and, less frequently, polyvinyl chloride (PVC), polycarbonate (PC) and poly-methyl-methacrylate (PMMA).

These plastics provide innovative and sustainable solutions. They enable water savings; management of the thermal range of cultivation environments; and, consequently, a reduction in energy input. Photo selectivity can improve the production of certain vegetables. Crops can grow in desert or degraded areas. Plastic irrigation pipes avoid wasting water and nutrients. Rainwater can be collected and held in plastic reservoirs. The use of pesticides in covered and controlled environments is less than in open field crops. The use of mulching reduces the use of herbicides and improves the thermal conditions for the plant’s roots, avoiding contact between plant and soil, contributing to the maintenance of soil moisture. The combined use of rainwater collection systems and reservoir lining with irrigation systems is essential for the management of water, which can be stored in dams covered with plastic materials to prevent the deposition of various particles and the growth of algae, avoiding clogging and reducing the maintenance of the dripping tubes.

In the international literature, there are numerous studies regarding management in rural properties. However, these studies, in general, deal with the management of aspects related to the production process, such as: effects of the management of agricultural practices about quality of the soil, including physical, chemical and microbial soil properties and on local flora and fauna [6–9]; the management of specific inputs, such as water and fertilizers [10,11]; and knowledge management [12]. There are also studies that evaluate strategies for the management of specific segments of agriculture and fisheries [13]. Other studies focus on marketing, the cost of production, the availability of technical and extension information, diversification and farm risk management [14].

However, in general, recommendations for agricultural management focus on agricultural product choice, water management, cultivation methods, soil softening by liming, use of fertilizers and crop protection (weed, pest and disease control) [15].

In the literature, some models are reported to assist in decision making in the management of agricultural establishments. These models generally use online information, back-propagation (BP) neural networks, algorithms and game theory [16,17], whereas other works have researched the performance of farmers’ participation in specific agricultural management models [18], as well as an Agricultural Resource Management Information Systems based on Internet of Things (IoT) and data mining [19].

However, the available management evaluation models have not developed classification systems that allow measuring and comparing the management levels of rural companies. In addition, the application of systems in general is not simple and fast, and their application on a large scale can be expensive, especially if it depends on trained human resources.

Additionally, there is a methodology—Agricultural Land Management (ALM) [20]—compatible with regenerative agriculture, which provides procedures to estimate the greenhouse gas (GHG) emission reductions and removals resulting from the adoption of improved agricultural land management practices focused on increasing soil organic carbon (SOC) storage. It also quantifies net emissions of CO₂ (carbon dioxide), CH₄ (methane gas), and N₂O (nitrous oxide) from grower operations. Additionally, there are works that summarize some models of rural development and analytical approaches as well as the history of agricultural systems modeling [21,22].

In the last decade, online platforms and software have proliferated mainly to help rural entrepreneurs in their decision-making, especially to obtaining better prices for their products and/or higher yields.

A study carried out in Brazil on the management of rural enterprises [23], using a systemic approach, proposed a conceptual model to help understand the functioning of a rural enterprise and assist in the decision making of rural entrepreneurs. Through empirical work, a diagnosis of the management of a set of rural enterprises was carried out. The fundamental variables for its management were identified, as well as the interrelationships between them. This model revealed the interdependence between management modules, such as: production planning, quality, costs, financial resources, marketing, commercialization and human resources.

In Brazil, the National Quality Foundation (FNQ) began its work in 1991, under the influence of the Baldrige Award, born in the USA, to face the greater competitiveness of Japanese companies. The institution of the PNQ (National Quality Award) was a reference and learning experience for all types of companies. From this experience, the Management Excellence Model (MEG) was developed. Its inspiration came from W. Edwards Deming's PDCA cycle (Plan, Do, Check, Act), and its first version was launched in 2000. Since then, the FNQ is an institution aligned with changes and developments in global economic scenarios. It incorporates trends from world-class organizations such as sustainability, corporate responsibility and valuing people. Proof of this alignment was the partnership established with the Fundación Iberoamericana para la Gestión de la Calidad (FUNDIBEQ). Another important partnership was established with the Brazilian Service of Support for Small and Medium Enterprises (SEBRAE) in 2010, but this has little activity in the agricultural segment. FNQ developed a company management assessment system, the Management Excellence Model[®] (MEG) [24,25]. The MEG is a reference model to guide an organization in a new way to implement its processes. It is applied in the assessment of the managerial maturity level of organizations from different sectors of the Brazilian economy. However, evaluation through the MEG demands time and, in general, the presence of specialists in the companies and consulting costs.

In addition, most of the management models available to the agricultural segment emphasize detailed surveys on sales, accounting, tax and working on financial spreadsheets that require a deeper knowledge of the administrative issues of a company or support from consultants. All these issues are important, but they demand time and financial and human resources, which the vast majority of rural entrepreneurs cannot afford, especially in countries where there is a concentration of small and medium-sized farmers.

Despite the different models, systems, methodologies and information about agricultural enterprise management, it is a challenge for agriculture to train rural entrepreneurs to assimilate and apply concepts of competitiveness, quality and management. Furthermore, in many agricultural regions, productivity and profit are not always achieved in a sustainable way.

The farmer (rural producer), in general, spends much of his time on technical issues and routine tasks, mainly focused on productive aspects, postponing the adoption of several administrative aspects. Additionally, in general, their decision-making is not based on methods that allow the systematic reproduction of the processes. Therefore, important stages of management are impaired and can compromise the activity as a whole.

For this reason, it is important to develop an evaluation system that can introduce rural producers to the world of administration in a gradual and didactic way, with time for learning and assimilation of management concepts in a balanced way, and beyond this, to help identify failures farms' management systems and provide information to correct them quickly and at low cost, in a way that works for companies.

Due to this scenario, the main objective of this work was to develop a simple, fast and low-cost application tool to support the transformation of farmers into rural entrepreneurs. The effective and periodic use of this tool aims to improve the level of management of agricultural enterprises and increase their competitiveness and sustainability in the long term. The goal is to promote the sustainable growth of rural businesses, not just support its survival.

The purpose is to offer a free tool that can be applied by the farmers themselves (self-assessment). Where the low level of education and training of farmers prevails, public or private technical assistance can support its application. Cooperatives, producer associations, rural unions and even companies supplying agricultural inputs will also be able to carry out the assessment and provide the results to farmers.

This tool can also support the elaboration of sectoral public policies, as well as assisting the work of rural extension and scientific and technological research and identifying the main deficiencies in the management of agribusiness.

2. Materials and Methods

To achieve the objective of the work, a tool was developed to identify the stage of administration of the rural company: the Management Degree Identification Method (MIGG) for the flower and ornamental plants (cut and potted), coffee, vegetables and fruits (in the field and in a controlled environment). The tool can be applied by printed or electronic form, in this case, a report is issued with recommendations for corrective actions as soon as the evaluation questionnaire is completed (the software will be made available free of charge to entrepreneurs, researchers and public or private institutions).

2.1. Choice of Management Criteria and Indicators

For the selection, prioritization and ranking of the themes and management indicators adopted, MIGG is based on the criteria recommended by a Brazilian institution, the National Quality Foundation (FNQ), and used in its company management assessment system, the Management Excellence Model[®] (MEG) [24,25].

The MIGG, inspired by the FNQ's MEG, allows the use of its concepts with agricultural companies, from small rural entrepreneurs to large agribusiness establishments. Its development for the different agricultural segments (flowers, coffee, fruits and vegetables) took place in four main stages:

- (1) Survey of technical information on agricultural production, harvesting, post-harvest, packaging, logistics and administrative aspects and survey of sectoral characteristics (Rapid Rural Appraisal—RRA) [26] and survey of sectoral characteristics—Method of Collection and Systematization of Secondary Information (MECASIS) [27];
- (2) Identification of critical factors for the production chain based on the results of the previous step, followed by the selection and ranking of parameters for evaluating the sustainability of production using the Delphi Technique [28,29];
- (3) Confrontation of the critical factors identified for each production chain, with the secondary information identified, respectively, for each chain, in the first step;
- (4) Preparation of management scripts, aimed at continuously raising quality standards in the stages of agro-industrial systems.

2.2. Focus Group Methodology

The validation of tests applied through questionnaires is important to verify if the test really has the capacity to measure the variables it proposes to analyze, as well as allowing the verification of the coherence and degree of difficulty of the questions, and the contribution of the survey to the target audience and its scope.

In order for the results of the analysis of the degree of management of companies, for each crop, in different producing regions to be comparable, the assessment tool needs to be the same for all regions.

The focus group methodology was used because it is repeatedly indicated in the literature as appropriate for the assessment of tests applied through questionnaires in different areas of knowledge. Its use stands out in the case of applied qualitative research, especially in social sciences [30–33].

The different concepts of focus group (FG) depend on the interest of the survey, due to the wide range of investigations it allows. In general, it is idealized as a quick, easy and practical procedure for the researcher to contact the population he intends to study. There are authors who emphasize the character of bringing together people with specific characteristics to produce qualitative information about a specific issue. Others characterize the FG as a research technique in which a group of people belonging to the target audience discuss information about a specific issue, which is the focus of the study. This feature is also conceived as a special type of group interview, aimed at gathering detailed information about a specific issue from a group of selected participants. FG participants should feel free to reveal the nature and origins of their opinions, allowing the issues to be broadly understood. The objective needs to be very well defined, so that the group focuses on important issues and is motivated to participate in the entire process. The optimal size ranges from 10 to 12 members, so that there is effective participation by the entire group. There are authors who recommend 6 to 10 members. There must be a moderator, responsible for organizing the discussion agenda and preventing the issue under discussion from being dispersed. Some authors also recommend performing a pre-test before applying the FG, which can be undertaken by applying the questionnaire to a small group of respondents with characteristics similar to those of the target population [34,35].

3. Results

So far, the tool developed consists of four agribusiness segments: flowers, coffee, fruits and vegetables. However, other agricultural and even livestock segments may be added. The software for applying the tool in the different segments of agribusiness should be made available through a digital platform, such as an Agricultural Management Platform.

3.1. Identification of Management Indicators—Delphi Technique

The management script developed aims supports the continually raise quality standards at all stages of the production system. It assesses eight criteria, selected by Delphi technique, which aim at excellence in management: strategies and planning; leadership; customers; society; information and knowledge; people; processes; and results.

The 64 questions that make up the questionnaire are simple and direct and admit only two answers: “yes” or “no”. Therefore, the subjectivity that often accompanies a descriptive or qualitative method is minimized (Table 1).

3.2. Identification of the Management Degree

Each of the 64 questions (management indicators) has a weight, which provides the respondent’s assessment with a sum of points. The eight criteria total a maximum of 1000 points (Table 1). The organization of the scoring system is based on the Management Excellence Model—MEG, from FNQ (which also has a maximum of 1000 points), but they are weighted and distributed according to the hierarchy of criteria, specific for the agricultural segment analyzed, according to the Delphi methodology.

The total points obtained classify the degree of management in levels from one to nine, with “one” being the lowest and “nine” the highest (Table 2).

Table 1. Management criteria and indicators: Management Degree Identification Method—MIGG *.

| Criteria | Management Indicator | Points | Criteria | Management Indicator | Points |
|-------------------------------|-----------------------------------------------|---------------------------------------------|---------------------------|---------------------------------------------------|--------|
| Strategies | 01. Business plan | 15 | Process | 34. Use of improved genetic material | 10 |
| | 02. Mission, Vision and Values | 15 | | 35. Performs variety testing | 10 |
| | 03. Planning | 15 | | 36. Uses certified seedlings and seeds | 10 |
| | 04. Production adjustment indices | 15 | | 37. Regularly performs nutritional control | 10 |
| | Subtotal | 60 | | 38. Uses precision equipment | 10 |
| Leadership | 05. Fair administration | 10 | | 39. There is adequate guidance for harvesting | 10 |
| | 06. Friction solution | 10 | | 40. The harvest is carried out correctly | 10 |
| | 07. Communication: objectives and results | 10 | | 41. Transport of the crop is adequate | 10 |
| | 08. Information on productive factors | 10 | | 42. Is there an adequate post-harvest unit | 10 |
| | 09. Obligations and responsibilities | 10 | | 43. There is control of the products parameters | 10 |
| Subtotal | 50 | 44. Products are stored properly | | 10 | |
| Customers | 10. Definition of sales values | 15 | | 45. Products are regularly evaluated | 10 |
| | 11. Regular product evaluation | 15 | | 46. There are regular quality inspections | 10 |
| | 12. Telephone targeting customers | 15 | | 47. There are preventive maintenance | 10 |
| | 13. Customer history | 15 | | 48. There are organization and cleaning | 10 |
| | 14. Customer complaints | 15 | | 49. There is quality control | 10 |
| 15. Solving delivery failures | 15 | 50. There is a history of volumes collected | | 10 | |
| Subtotal | 90 | 51. Rural credit is used | | 10 | |
| Society | 16. Rational use of agrochemicals | 10 | | 52. Rural insurance is used | 10 |
| | 17. Correct disposal of water and waste | 10 | | Subtotal | 190 |
| | 18. Minimum age of employees | 10 | | 53. Assessing the evolution of sales | 50 |
| | 19. Participation in collective organizations | 10 | | 54. There is control of revenue evolution | 50 |
| | 20. Fees and taxes in order organizations | 10 | | 55. Direct customer satisfaction assessment | 50 |
| 21. Ways to ensure ethics | 10 | 56. Market relationship assessment | | 50 | |
| Subtotal | 60 | 57. Assessment of the company reputation | | 20 | |
| Information | 22. Use public and private assistance | 15 | Results | 58. Environmental regulations are respected | 20 |
| | 23. Use of internet | 15 | | 59. The well-being of employees is respected | 30 |
| | 24. The organization participates in events | 15 | | 60. Monitoring the evolution of productivity | 30 |
| | 25. Keeps in regular contact with customers | 15 | | 61. Classification of products by pattern classes | 30 |
| | 26. Seek new marketing opportunities | 15 | | 62. Operational Efficiency Assessment | 30 |
| | 27. Use process protocols | 15 | | 63. Quality assessment of services received | 20 |
| | Subtotal | 90 | | 64. Evaluation of Corrective Actions by Suppliers | 20 |
| People | 28. Regular and correct use of I.P.I. | 10 | Subtotal | 400 | |
| | 29. There is a health plan for employees | 10 | Grand total = 1000 points | | |
| | 30. Employee training | 10 | | | |
| | 31. Identification of leadership | 10 | | | |
| | 32. Employee performance assessment | 10 | | | |
| | 33. Adequate remuneration for employees | 10 | | | |
| Subtotal | 60 | | | | |

* Scorecard of the self-assessment questionnaire. Source: Result of the work.

Table 2. Classification of the maturity level of companies—MIGG.

| Management Degree | Maturity Degree | Score |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 9 | The approaches are highly proactive, innovative, continuous use, permanent learning and fully integrated. Favorable trends in all results. Organization is “a benchmark for excellence” in most areas, processes or products. | 851–1000 |
| 8 | Approaches are refined, some innovative, with widespread use. The organization is a benchmark for excellence in many areas, processes or products. | 751–850 |
| 7 | The organization is a reference for excellence in some areas, processes or products. | 651–750 |
| 6 | The organization is considered one of the industry’s leaders. | 551–650 |
| 5 | There are gaps in the interrelationship of management practices. Favorable trend in most results. | 451–550 |
| 4 | Management practices are consistent with most of the organization’s strategies. There are significant gaps. | 341–450 |
| 3 | The approaches are suitable for some criteria. There are positive results, but there are inconsistencies between management practices and strategies. | 251–350 |
| 2 | The first stages of development of management practices are observed. There are significant gaps to be filled. | 151–250 |
| 1 | The preliminary stages of management development are observed. | 0–150 |

Source: Result of the work.

Each of the MIGG questionnaires already developed (coffee, flowers, fruits and vegetables) were developed according to the same methodological set. The development of the MIGG for other segments of agriculture should be carried out in the same way.

The methodological set includes the Delphi methodology for identifying and ranking the main weaknesses and strengths of the agricultural product production chain for which the MIGG tool is being developed. Each of these production chains has its own characteristics. Consequently, the management indicators obtained for each product, especially in relation to agricultural processes, may be different.

Consequently, the participation of some inputs in agricultural processes and the relevance of aspects related to them, such as the use of agricultural plastics and the need to recycle it, have different weights in each of the production chains.

In coffee production, for instance, agricultural plastic is used mainly in the production of seedlings, irrigation systems (not always necessary) and, eventually, in greenhouses for drying harvested grains, whereas in the production of flowers and vegetables in protected environments, the use of plastic is significantly more important than in the production of coffee.

Therefore, in Appendix A (Table A1), there are 64 questions that make up the MIGG Vegetables, as an example of the way in which important aspects regarding the different agricultural inputs permeate the 64 indicators. The use of agricultural plastic, for instance, is linked to at least four indicators, namely 17, 37, 38 and 58.

3.3. Tool Validation

To validate the MIGG as a diagnostic and intervention tool for agricultural production, the focus group methodology was used. Taking the coffee segment as an example, the geographical Microregion of Barreiras, in the Extreme West of Bahia state, Brazil, was used as a basis for the application of the focus group, where coffee production is quite homogeneous in terms of edaphoclimatic and technological conditions of cultivation, a desirable characteristic in focus group methodology.

To assess the acceptability of the questionnaire, the clarity of the criteria and indicators that make up the questionnaire, the accessibility of the vocabulary and the feasibility of its self-application, the pre-test was carried out with eight coffee growers from traditional coffee regions in the State of São Paulo, Brazil, with different technological and structural characteristics. As a result, adjustments were made to the questionnaire presentation, and a glossary was included in the electronic form, enabling entrepreneurs with different socioeconomic and cultural levels to better understand the tool.

Despite the edaphoclimatic homogeneity and the homogeneity of the technological level employed in the companies in the Focal Group sample, according to the requirement of the method, it must be considered that the Far West of Bahia has a technological level much higher than the average of most coffee mesoregions Brazilian properties and is represented by properties that work effectively in a business system. Therefore, regarding the feasibility of self-application of the MIGG by coffee growers with very low technological levels, little access to information and little used to administrative and economic jargon, the FG recommended that it be carried out by representatives of cooperatives, associations, rural unions, or public or private technical assistance and rural extension companies.

Comparing the results obtained in the FG with the levels of management of coffee companies, obtained through the MIGG, in the Extreme West of Bahia state, corresponding to the Cerrado of Bahia state, it was concluded that the developed methodology is adequate to measure the degree management of companies, since the results obtained correspond to those previously expected.

That is, the validation proved that the MIGG adequately quantifies the degree of management of rural establishments. Therefore, the MIGG tool will provide reliable support for rural companies to implement corrective actions in their management process. The effective and continuous implementation of corrective actions can transform, over time, farmers into true rural entrepreneurs.

3.4. Online Tools and Digital Platform

After the MIGG validation, online tools were developed, and a digital platform—Agricultural Management Platform—is under development, using PHP (Hypertext Preprocessor, open-source programming language), HTML (Hypertext Markup Language), CSS (Cascading Style Sheets), Bootstrap and Java Script languages.

When the self-assessment is completed, three files are automatically made available to the respondent: (1) the degree of management of the assessed business and the total score obtained; (2) the scores for each of the 64 indicators; and (3) recommendations for corrective actions, classified according to the time required to solve the deficiencies:

- High or immediate—to be resolved within a maximum of 30 days;
- Medium or intermediate—to be effective within 120 days;
- Low or slow resolution—to be effective within 360 days.

The application of MIGG should be carried out with some frequency, mainly because the tool aims at continuous improvement. With each repetition, the farmer must follow the recommendations for improvements in the management of his business. The implementation of corrections will require time, human resources and/or financial resources. Therefore, it is recommended that the self-assessment be carried out close to once a year. The farmer will be able to compare the score achieved in each evaluation with the one obtained previously. The new score may represent an increase in the management level or

at least an increase in the score if the farmer has implemented some improvement in his management system.

Over time, it is hoped that the succession of assessments and the improvements implemented according to the tool's recommendations will help transform farmers into true rural entrepreneurs. It is also expected that the sustainability and competitiveness of its companies will grow significantly in the medium and long term, individually or in the analyzed segment as a whole, locally or regionally.

4. Discussion and Conclusions

The study began in 2010, with the construction of a tool for the flower segment, applied through a printed form, for a doctoral thesis. Then, other agricultural segments were included. MIGG can be used in other segments of agriculture, such as grains or livestock, for both milk and meat production. Currently, the tool consists of flower, coffee, fruit and vegetable segments. The implementation of online tools started in 2016 and has been improved since then. The effective implementation occurred in the following order: coffee, flowers, vegetables and fruits. From 2015 were evaluated 1182 coffee farms, 51 producers of vegetables, 45 of flowers and 5 of fruits in 17 Brazilian states. The application of MIGG over the years has registered the management of companies at a given time. This was important to show farmers how deficient the management systems in Brazilian agriculture are and how much they can be improved. It also showed that the tool has been well accepted by farmers and that its large-scale application is feasible.

The results already analyzed for coffee, flowers and vegetables show that, for those segments, the business vision of management is still limited, with ample opportunity for evolution, regardless of the main activity developed in rural firms, the size of the company or even the company geographic location (Tables 3–5) (For fruits segments, the number of evaluations is still incipient).

Table 3. Management degree in Brazilian coffee production according to MIGG assessment.

| States and Brazil | Management Degree Average | Number of MIGG Coffee Assessments per Region | | | |
|------------------------------|---------------------------|----------------------------------------------|--------|--------------|-------------|
| | | State | Cities | Microregions | Mesoregions |
| Bahia | 5.59 | 91 | 14 | 7 | 3 |
| Distrito Federal | 6.00 | 2 | 1 | 1 | 1 |
| Espírito Santo | 6.26 | 175 | 28 | 9 | 4 |
| Minas Gerais | 6.56 | 475 | 109 | 30 | 11 |
| Paraná | 6.21 | 170 | 32 | 12 | 4 |
| Rio de Janeiro | 9.00 | 7 | 2 | 2 | 2 |
| Rondônia | 5.50 | 19 | 11 | 5 | 2 |
| São Paulo | 7.36 | 243 | 40 | 17 | 11 |
| Brazil | 6.55 | 1182 | 237 | 83 | 38 |
| Maximum management level: 09 | | Minimum management level: 01 | | | |

Source: Result of the work.

Over time, as rural establishments repeat their self-assessments, the MIGG database will be able to assess the evolution of the degree of management of each of them. Consequently, it will be able to verify if the management systems of those establishments have been improved, so that the farmers can effectively be considered as entrepreneurs.

The main objective of the tool is to support the transformation of farmers into rural entrepreneurs. Its effectiveness in making the transformation itself will depend on the actions of the farmer himself in the face of the identification of weaknesses in a management system.

Table 4. Management degree in Brazilian flowers production according to MIGG assessment.

| States and Brazil | Management Degree Average | Number of MIGG Coffee Assessments per Region | | | |
|------------------------------|---------------------------|----------------------------------------------|--------|--------------|-------------|
| | | State | Cities | Microregions | Mesoregions |
| Ceará | 6.00 | 1 | 1 | 1 | 1 |
| Minas Gerais | 7.00 | 5 | 2 | 2 | 1 |
| Mato Grosso | 7.50 | 2 | 1 | 1 | 1 |
| Rio Grande do Sul | 3.00 | 1 | 1 | 1 | 1 |
| São Paulo | 7.20 | 36 | 9 | 5 | 5 |
| Brazil | 7.03 | 45 | 14 | 10 | 9 |
| Maximum management level: 09 | | Minimum management level: 01 | | | |

Source: Result of the work.

Table 5. Management degree in Brazilian Vegetables production according to MIGG assessment.

| State and Brazil | Management Degree Average | Number of MIGG Vegetables Assessments per Region | | | |
|------------------------------|---------------------------|--------------------------------------------------|--------|--------------|-------------|
| | | State | Cities | Microregions | Mesoregions |
| Acre | 6.00 | 1 | 1 | 1 | 1 |
| Espírito Santo | 9.00 | 1 | 1 | 1 | 1 |
| Federal District | 7.25 | 4 | 1 | 1 | 1 |
| Mato Grosso | 6.00 | 4 | 3 | 1 | 1 |
| Mato Grosso do Sul | 9.00 | 2 | 1 | 1 | 1 |
| Minas Gerais | 6.75 | 1 | 1 | 1 | 1 |
| Pará | 5.00 | 1 | 1 | 1 | 1 |
| Paraná | 8.00 | 1 | 1 | 1 | 1 |
| Rio Grande do Sul | 7.40 | 10 | 6 | 6 | 5 |
| Santa Catarina | 7.75 | 4 | 4 | 4 | 3 |
| Sergipe | 7.00 | 1 | 1 | 1 | 1 |
| São Paulo | 6.95 | 20 | 12 | 9 | 7 |
| Tocantins | 4.00 | 1 | 1 | 1 | 1 |
| Brazil | 6.94 | 51 | 12 | 29 | 25 |
| Maximum management level: 09 | | Minimum management level: 01 | | | |

Source: Result of the work.

Furthermore, the tool developed can be adapted to the needs and edaphoclimatic characteristics of the different producing regions, whether in Asia, Africa, Latin America, Europe or any other geographic region.

Examples of a practical application of the MIGG tool is presented in preliminary study by some authors, mainly for the coffee sector [36–38].

In summary, MIGG makes it possible to obtain information for rural producers to improve their economic activity and transform it into an organized and profitable company. It uses a questionnaire that is easy and quick to apply to classify activity management levels with different degrees of organization. It allows pointing out strengths and weaknesses and indicates corrective actions for maintenance and advances in the quality of processes. The roadmap is based on the critical management points identified through MIGG. Every year, rural entrepreneurs will be able to reassess their level of management and monitor the evolution of their activity.

The MIGG tool and the establishment of an Agricultural Management Platform may expand the possibilities for rural entrepreneurs to seek and adopt new technologies, compare

performance and share experiences from different situations and/or producing regions, promoting their integration as proactive agents in production chains, regardless of its geographic dispersion and, mainly, physical distances and communication difficulties, characteristics of economic production activities in the countryside. They will also be able to help evaluate and update guidelines for institutional programs—rural extension, scientific research and technical training—and, by allowing comparisons between companies, production processes, technological levels and regions, they will be able to help in the evaluation of the competitiveness of local arrangements, aimed at development sustainable regional development.

As for the efficient use of resources, MIGG emphasizes the achievement of qualitative and quantitative results, aiming at the more efficient use of material, human, financial, administrative and technological resources, as the improvement of the management systems of companies seeks greater satisfaction and confidence of the customers, reducing internal costs, increasing productivity through the use of appropriate technologies, improving the image and agricultural processes, obtaining better quality products and accessing new markets. It also aims to improve the efficiency of public and private companies, which will be able to serve a greater number of users in less time and with specific diagnoses. As for the possibility of integration, coordinated actions can be carried out, with initiatives from other public or private bodies, as well as through the formalization of partnerships between institutions.

Through an Agricultural Management Platform, statistics referring to management levels generated by MIGG can be published on the internet, by geographic region and in technical and scientific publications, allowing direct users (rural entrepreneurs) to compare their performance (degree of management) with the averages of different regions.

Therefore, the Management Degree Identification Method emphasizes the transformation of farmers into rural entrepreneurs, through the creation and implementation of mechanisms for greater transparency, professionalization and sustainability in agriculture in different geographic regions.

Author Contributions: Conceptualization, A.B.J.; Data curation, A.B.J. and F.M.d.M.B.; Formal analysis, F.M.d.M.B.; Funding acquisition, F.M.d.M.B.; Investigation, A.B.J. and F.M.d.M.B.; Methodology, A.B.J. and F.M.d.M.B.; Project administration, F.M.d.M.B.; Resources, A.B.J. and F.M.d.M.B.; Software, A.B.J.; Supervision, F.M.d.M.B.; Validation, A.B.J. and F.M.d.M.B.; Visualization, A.B.J.; Writing—original draft, A.B.J.; Writing—review & editing, F.M.d.M.B. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by São Paulo State Research Support Foundation—FAPESP; by National Council for Scientific and Technological Development—CNPq and Agricultural Research Support Foundation -FUNDAG.

Informed Consent Statement: Patient consent was waived.

Data Availability Statement: Not applicable.

Conflicts of Interest: The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.

Appendix A. The MIGG Questionnaire Example: Vegetable Production

The 64 questions that make up the MIGG, incorporating the adjustments made as a result of the pre-test, as well as the suggestions of the Focus Group, are presented below, using as an example the vegetable segment:

Table A1. Criteria and indicators that make up Migg Vegetable Production.

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Criterion Strategies and Plans | |
| This criterion examines the strategy formulation process, emphasizing the planning, organization, and strategy implementation process. | |
| 1 | Does the organization have a Business Plan? (Documented!) |
| 2 | Does the organization have a clear definition in a document about its reason for existing (Mission) and where it intends to arrive in a defined future (Vision) and about the organizational principles that guide how employees (Values)? (Documented!) |
| 3 | Is there a plan with defined steps and goals to be fulfilled periodically? (Documented!) |
| 4 | Does the organization work with production “adjustment indices” seeking to adapt to the volumes of products demanded by customers? (Documented!) |
| 2. Leadership Criteria | |
| This criterion examines the organization’s leadership system and the personal commitment of management to the establishment. | |
| 5 | Does the organization’s management exercise its authority with fairness and respect in the relationship with employees, suppliers and customers |
| 6 | Frictions are not frequent and if there are complaints, are they resolved quickly with the participation of all those involved? |
| 7 | Does management frequently and clearly communicate the organization’s objectives and results? |
| 8 | Does the administration seek to be informed of all factors, internal and external, that influence the productive and commercial aspects of the organization? |
| 9 | Does the administration take the lead in the main actions and seek to adequately delegate obligations and responsibilities to other employees, including in relation to Occupational Health and Safety (OSH)? |
| 3. Customer Criteria | |
| This criterion examines how the organization segments the market, how it identifies and addresses the needs and expectations of customers and markets, and how it strengthens its relationship with customers. It also examines how the organization assesses customer satisfaction and dissatisfaction. | |
| 10 | Does the organization know how to define sales values based on the costs and quality of its products, aiming to maximize its gains? |
| 11 | Are the company’s products regularly evaluated for their post-harvest durability (samples testing “shelf life”) and compared to the competition? |
| 12 | Does the organization maintain a telephone line to facilitate communication with its customers? |
| 13 | Is a record or database kept with the history of customer relationships? |
| 14 | Are complaints communicated to the company’s management and forwarded with priority to be resolved with the customer and internally in the organization? |
| 15 | Are delivery failures (delays, under-order quantities or sub-standard quality) communicated to customers directly by someone with a high position in the organization’s management? |
| 4. Society Criteria | |
| This criterion examines how the organization contributes to economic, social and environmental development in a sustainable way. | |
| 16 | Does the organization seek to use biological control and/or carry out the rational use of agrochemicals in its production processes? |
| 17 | Agricultural residues from the cultivation areas are processed for later incorporation into the production processes (recycling/composting) and the other residues are destined by the organization as recommended by the National Solid Waste Policy (Brazilian LAW No. 12,305, of August 2, 2010) including the destination of films, greenhouse covering screens, plastic channels and other materials? |
| 18 | Does the organization always hire employees with an age equal to or greater than that established in the legislation? |
| 19 | Does the organization integrate at least one cooperative or association in the field of activity in which it operates? |
| 20 | Does the organization regularly collect fees and taxes, including social charges, complying with tax and labor legislation? |
| 21 | Does the organization have mechanisms to ensure ethics in internal and external relationships (Code of conduct covering employees, customers, suppliers and society) and encourage its application throughout the chain? |

Table A1. Cont.

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5. Information and Knowledge Criteria | |
| This criterion examines the management and use of the organization's internal and relevant external (comparative) information, as well as the management of intangible assets that generate differentials. | |
| 22 | Does the organization seek information from public and private assistance services to improve its production processes, including in relation to Occupational Health and Safety (OSH)? |
| 23 | The organization makes use of the internet in at least one of the following aspects: search for information, communication and dissemination of information about the organization through its own website, including in relation to Occupational Health and Safety (OSH)? |
| 24 | The organization, through a management representative or qualified technician, regularly participates in fairs, congresses, "field days" and visits to other production areas. |
| 25 | Does the organization, through a management representative or qualified technician, maintain a close relationship with customers through regular contacts and visits? |
| 26 | Does the organization seek to identify and develop new opportunities for marketing its products and protect existing marketing channels? |
| 27 | Does the organization have records and procedures protocols of technologies, methods and production processes as well as seeks to identify, develop and incorporate innovations to add value to its products and services, including in relation to Occupational Health and Safety (OSH)? |
| 6. People Criteria | |
| This criterion examines how conditions are provided for the development and full use of the potential of the people who make up the workforce, in line with organizational strategies. It also examines capacity building and development, as well as efforts to create and maintain a work environment and organizational climate that are conducive to performance excellence, full participation and people growth. | |
| 28 | In production processes, workers use E.P.I. regularly and correctly, recommended by a qualified professional, provided by the organization? |
| 29 | Does the organization offer health insurance to its employees? |
| 30 | Does the organization offer opportunities and encourage the participation of its employees in educational and professional training programs aimed at improving and developing its workforce, including in relation to Occupational Health and Safety (OSH)? |
| 31 | Does the organization seek to identify and develop the leadership characteristics of its employees, aiming to train future sector managers and supervisors, including in relation to Occupational Health and Safety (OSH)? |
| 32 | Does the work system allow better performance of employees/employees and allows the leader to identify employees who react faster to the challenges of the activities they perform, including in relation to Occupational Health and Safety (OSH)? |
| 33 | Has the work system, including remuneration and other incentives, contributed to a better performance of employees and the identification of those with the capacity to seek and achieve new knowledge to Occupational Health and Safety (OSH)? |
| 7. Criteria Processes | |
| This criterion examines how the organization identifies, manages, analyzes and improves core business processes and supporting processes. It also examines how the organization manages the supplier relationship process and conducts the management of economic-financial processes, aiming at the economic sustainability of the business. | |
| 34 | Does the organization seek contact with companies and research institutes aiming at the use of improved genetic material in its crops? |
| 35 | Does the organization, whenever possible, use and test different varieties looking for pest and disease resistance characteristics and new consumer market trends such as colors and formats? |
| 36 | In the cultivation process, does the organization use industrialized substrates as a way of guaranteeing the health and quality of the crops? |
| 37 | In the production process, does the organization use protected cultivation (greenhouses and screened nurseries) as a way of increasing the quality of the products? |
| 38 | Are the seedlings of the cultivated species kept in a protected environment and isolated from the subsequent stages of production? |

Table A1. *Cont.*

| | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 39 | In the cultivation process, does the organization require seedlings and seed certificates from nurseries and seed producers? |
| 40 | In the nutritional control of crops, does the organization make regular use of chemical analyzes and recommendations from laboratories and/or specialized professionals? |
| 41 | Does the organization use electrical conductivity, pH and temperature meters of the nutrient solution in crop management? |
| 42 | Do employees and those responsible for the production process have adequate knowledge and guidance to carry out the harvest at the right time? |
| 43 | Are the newly harvested products transported quickly and properly (packaging or basket) in a vehicle or equipment specially designed for this purpose, respecting Occupational Health and Safety (OSH)? |
| 44 | Does the organization have Cold Storage Chambers for the conservation of its products? |
| 45 | Is the processing unit (Packing House) refrigerated? |
| 46 | Is the transport (dispatch) of packaged products carried out in refrigerated vehicles? |
| 47 | Is there a procedure and an employee in charge of preventive maintenance of machines and equipment? |
| 48 | Is there a routine procedure to keep work environments, including storerooms, sheds, fields and nurseries clean and organized? |
| 49 | Are quality control inspections carried out regularly, such as the size of bunches or fruits, malformations, presence of pests or stains on the products to be shipped? |
| 50 | Is there planning aimed at quality control and the reduction of conferences and inspections? |
| 51 | Does the organization use agricultural credit? |
| 52 | Does the organization use insurance for vehicles, machinery, improvements and other production factors used in the cultivation processes? |

8. Criterion Results

This criterion examines how the organization evaluates and analyzes the performance of production processes, economic and financial, customers and market, people, society and suppliers.

| | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 53 | Does the organization regularly monitor sales performance by evaluating what was expected versus what was actually accomplished? |
| 54 | Is revenue growth periodically evaluated? For instance, comparing one year's revenue compared to the previous year's sales. |
| 55 | Is the satisfaction of your direct customers monitored or obtained in any way? |
| 56 | In the relationship with the market, are problem solving and implementation of corrective actions recorded internally by the organization and reported to the interested customer? |
| 57 | Is there a positive evaluation of the organization by a commercial, ethical administration, perceived as a valuable and reliable company with its customers, suppliers and employees? |
| 58 | Has the organization worked to comply with environmental regulations? (Percentage of requirements met divided by total applicable requirements, based on legislation and environmental commitments assumed). |
| 59 | Does the organization regularly assess the well being, satisfaction and motivation of its employees and are the jobs and living area in accordance with national regulations? (For example, by the percentage of people satisfied with the benefits offered). |
| 60 | Does the organization evaluate continuous improvement in productivity? Production per person or economic value added per person, periodically, respecting Occupational Health and Safety (OSH)? |
| 61 | Is the percentage of plants or fruits produced within the highest standard classes regularly evaluated for each batch, plot or harvest? |
| 62 | Is the operational efficiency of actions or crops evaluated in terms of consumption of fuel, energy, water or fertilizers per unit produced? |
| 63 | Is the quality and punctuality of products and services received from suppliers systematically observed and measured? |
| 64 | Does the percentage of corrective actions implemented on time and effectively by the suppliers result in the strengthening of the relationship with them? |

References

1. Garcia, A.S.; Silva, W.M.; Orsato, R.J. Sensitive industries produce better ESG performance: Evidence from emerging markets. *J. Clean. Prod.* **2017**, *150*, 135–147. Available online: https://pesquisa-eaesp.fgv.br/sites/gvpesquisa.fgv.br/files/arquivos/1._orsato_sensitive_i_-_1-s2.0-s0959652617304067-main.pdf (accessed on 9 February 2022). [CrossRef]
2. Boffo, R.; Patalano, R. *ESG Investing: Practices, Progress and Challenges*; OECD: Paris, France, 2020. Available online: <https://www.oecd.org/finance/ESG-Investing-Practices-Progress-Challenges.pdf> (accessed on 10 February 2022).
3. Panferova, L. The importance of internal control for agricultural organizations and ways to improve it. DAIC 2020. In *E3S Web of Conferences*; EDP Sciences: Ulis, France, 2020; Volume 222, p. 06025. [CrossRef]
4. United Nations. Sustainable Development Goals. 2016. Available online: <https://www.un.org/en/academic-impact/page/sustainable-development-goals> (accessed on 29 December 2021).
5. Murray, A.; Skene, K.; Haynes, K. The circular economy: An interdisciplinary exploration of the concept and application in a global context. *J. Bus. Ethics* **2017**, *140*, 369–380. [CrossRef]
6. Alaoui, A.; Barao, L.; Ferreira, C.S. Visual assessment of the impact of agricultural management practices on soil quality. *Agron. J.* **2020**, *112*, 2608–2623. [CrossRef]
7. Costa, L.M.; Drescher, M.S. Implications of agricultural management on the epigeic fauna and soil physical properties of a clayey Oxisol. *Rev. Ceres* **2018**, *65*, 5. [CrossRef]
8. Lourente, E.R.P.; Silva, E.F.S.; Mercante, F.M.; Serra, A.P.; Peixoto, P.P.P.; Sereia, R.C.; Ensinas, S.C.; Neto Neto, A.L.; Alovisi, A.M.T.; Marchetti, M.E.; et al. Agricultural management systems effect on physical, chemical and microbial soil properties. *Aust. J. Crop Sci.* **2016**, *10*, 683–692. [CrossRef]
9. Schmidt, J.E.; Kent, A.D.; Brisson, V.L.; Gaudin, A.C.M. Agricultural management and plant selection interactively affect rhizosphere microbial community structure and nitrogen cycling. *Microbiome* **2019**, *7*, 146. [CrossRef]
10. Fisher, J.B.; Melton, F.; Middleton, E.; Hain, C.; Anderson, M.; Allen, R.; McCabe, M.F.; Hook, S.; Baldocchi, D.; Townsend, P.A.; et al. The future of evapotranspiration: Global requirements for ecosystem functioning, carbon and climate feedbacks, agricultural management, and water resources. *Water Resour. Res.* **2017**, *53*, 2618–2626. [CrossRef]
11. USDA—United States Department of Agriculture. *Protecting Our Watersheds through Research and Management. Challenges and Opportunities*; USDA: Washington DC, USA, 2001; 16p.
12. Hess, C.G. Knowledge Management and Knowledge Systems for Rural Development. READER: GTZ Knowledge Management. GTZ Sector Project Knowledge Systems in Rural Development. Available online: <https://www.gtz.de/agriservice> (accessed on 8 February 2022).
13. Siple, M.C.; Koehn, L.E.; Johnson, K.F.; Punt, A.E.; Canales, T.M.; Carpi, P.; de Moor, C.L.; de Oliveira, J.A.A.; Gao, J.; Jacobsen, N.S.; et al. Considerations for management strategy evaluation for small pelagic fishes. *Fish Fish.* **2021**, *22*, 1167–1186. [CrossRef]
14. Marsh, A. Diversification by smallholder farmers: Viet Nam Robusta Coffee. In *Agricultural Management, Marketing and Finance Working Document–19*; Food and Agriculture Organization of The United Nations: Rome, Italy, 2007; 50p.
15. Andriesse, J.P. Nature and Management of Tropical Peat Soils. In *FAO Soils Bulletin 59*; Food and Agriculture Organization of the United Nations: Rome, Italy, 1998.
16. Kaliyan, K.; Kothandaraman, R. Secure Decision-Making Approach to Improve Knowledge Management Based on Online Samples. *Int. J. Intell. Eng. Syst.* **2018**, *11*, 1. [CrossRef]
17. Xiao, L. Performance evaluation of modern agricultural management main body in Anhui based on BP Neural Network Algorithm. *Int. J. Database Theory Appl.* **2016**, *9*, 333–342. [CrossRef]
18. Li, X.; Yang, B.; Liu, Y. Research on the Performance of Farmers' Participation in the New Agricultural Management Model. In *IOP Conference Series: Earth and Environmental Science*; IOP Publishing: Bristol, UK, 2020; Volume 615, p. 012009. [CrossRef]
19. Gao, S. The Application of Agricultural Resource Management Information System Based on Internet of Things and Data Mining. *IEEE Access* **2021**, *9*, 164837–164845. [CrossRef]
20. Shoch, D.; Swails, E. *Methodology for Improved Agricultural Land Management*; Version 1.0 19; Sectoral Scope 14; TerraCarbon LLC, Indigo Ag: Peoria, IL, USA, 2020; 113p.
21. Hodge, I.; Midmore, P. Models of Rural Development and Approaches to Analysis Evaluation and Decision-Making. *Économie Rural.* **2008**, *307*, 23–38. [CrossRef]
22. Jones, J.W.; Basso, B.; Boote, K.J.; Conant, R.T.; Foster, I.; Godfray, C.; Herrero, M.; Howitt, R.; Janssen, S.; Keating, B.A.; et al. Brief history of agricultural systems modeling. *Agric. Syst.* **2016**, *155*, 240–254. [CrossRef] [PubMed]
23. Lourenzani, W.L.; Souza Filho, H.M.; Bãnkuti, F.I. Management of the Rural Firm—A Systemic Approach. In *IV International Congress of Economics and Management of Agrifood Networks*; FEAUSP (School of Economics, Business and Accounting of University of São Paulo): Ribeirão Preto, Brazil, 2003.
24. Souza, V.Z.; Schoereberger, E.; Anesi, R.S.; Bandeira, A.P.; Manfro, R.; Garcia, G. Model of management excellence as a methodology for management in dentistry. *Braz. J. Health Rev.* **2021**, *4*, 2400–2441. [CrossRef]
25. Sartori, T.; Weise, A.D. Models of Quality Management Applied to Organizations Seeking to Innovation Management. *Indep. J. Manag. Prod.* **2013**, *4*, 1. Available online: <http://www.ijmp.jor.br/index.php/ijmp/article/view/56/53> (accessed on 10 February 2022). [CrossRef]
26. Crawford, I.M. *Marketing Research and Information Systems*; (Marketing and Agribusiness Texts–4); Food and Agriculture Organization of the United Nations: Rome, Italy, 1997.

27. AGROPOLOS: *Uma Proposta Metodológica (AGROPOLOS: A Methodological Proposal)*; ABIPTI, SEBRAE: Brasília DF, Brazil, 1999; 375p.
28. Baker, J.; Lovell, K.; Harris, N. How expert are the experts? an exploration of the concept of “expert” within Delphi panel techniques. *Nurse Res.* **2006**, *14*, 59–70. [[CrossRef](#)] [[PubMed](#)]
29. Zambrano, D.C.; Bonilla, R.R.; Zambrano, G.; Avellaneda, L. Prospective analysis of agricultural bioinoculants in Colombia: An expert consultation. *Rev. Colomb. Biotechnol.* **2015**, *17*, 101–111. [[CrossRef](#)]
30. Kinalski, D.D.F.; Paula, C.C.; Padoim, S.M.M.; Neves, E.T.; Kleinubing, R.E.; Cortes, K.F. Focus group on qualitative research: Experience report. Experience Report. *Rev. Bras. Enferm.* **2017**, *70*, 424–429. [[CrossRef](#)]
31. Nyumba, T.O.; Wilson, K.; Derrick, C.J.; Mukherjee, N. The use of focus group discussion methodology: Insights from two decades of application in conservation. Qualitative Methods for Eliciting Judgements for Decision Making. *Methods Ecol. Evol.* **2018**, *9*, 20–32. [[CrossRef](#)]
32. Krueger, R.A.; Casey, M.A. *Focus Groups: A Practical Guide for Applied Research*, 4th ed.; Sage Publications: London, UK, 2009; 217p.
33. Freitas, H.; Oliveira, M.; Jenkins, M.; Popjoy, O. *The Focus Group, A Qualitative Research Method*; ISRC, Merrick School of Business, University of Baltimore (MD, EUA), WP ISRC No. 010298; Merrick School of Business, University of Baltimore: Baltimore, MD, USA, 1998; 22p. Available online: http://gianti.ea.ufrgs.br/files/artigos/1998/1998_079_ISRC.pdf (accessed on 9 February 2022).
34. Cyr, J. An integrative approach to measurement: Focus groups as a survey pretest. *Qual. Quant.* **2019**, *53*, 897–913. [[CrossRef](#)]
35. Domingues, E.A.R.; Alexandre, N.M.C.; Silva, J.V. Cultural adaptation and validation of the Freiburg Life Quality Assessment—Wound Module to Brazilian Portuguese. *Rev. Lat. Am. Enferm.* **2016**, *24*, e2684. [[CrossRef](#)] [[PubMed](#)]
36. Bliska Júnior, A.; Correa, F.R.F.; Turco, P.H.N.; Firetti, R.; Bliska, F.M.M. Quality management level of Brazilian coffee business in producing regions. In *Ecology, Ecosystems and Stress: Impacts, Adaptation and Mitigation*, 1st ed.; Amitava, R., Ed.; Atiner—Athens Institute for Education and Research: Atenas, Greece, 2016; Volume 1, pp. 91–102.
37. Bliska, F.M.M.; Bliska Júnior, A.; Barros, T.M.S.M. Uma perspectiva da gestão da segurança e saúde ocupacional na produção brasileira de café (A perspective of occupational health and safety management in Brazilian coffee production). *Inf. Gepec* **2019**, *23*, 162–180. Available online: <https://e-revista.unioeste.br/index.php/gepec/article/view/19237> (accessed on 27 December 2021).
38. Faleiros, G.D.; Bliska Júnior, A.; Turco, P.H.N.; Bliska, F.M.M. A importância da gestão na competitividade dos cafezais da Alta Mogiana Paulista (The importance of management in the competitiveness of coffee plantations in Alta Mogiana Paulista). *Cientifica* **2020**, *48*, 1–16. [[CrossRef](#)]