

LOCAL GREEN MARKETING BUSINESS ENVIRONMENTAL REGULATORY FRAMEWORK FOR BATAAN MSME FOOD PROCESSING: CONSULTATIVE DEVELOPMENT PROCESS

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ABSTRACT

The overarching goal of this exploratory sequential mixed methods design is to evaluate the environmental practices of specific small and medium enterprises (SMEs) in Bataan, Philippines, with a focus on green marketing aspects such as raw material usage, energy consumption, water conservation, waste management, air emissions, and wastewater treatment. Additionally, the study investigates the degree of public involvement in formulating regulations related to green marketing. Respondents, comprising business owners and local government officials, were chosen through a two-step cluster sampling method for quantitative analysis and purposeful sampling for qualitative insights. More so, it revealed a consistent implementation of environmentally friendly practices and green marketing management among SMEs. Interviews with business owners and local government officials yielded positive responses regarding the development of local green marketing policies, particularly for businesses in the food processing sector. Through the analysis and interpretation of collected data, the study provided valuable insights guiding the formulation of a regulatory framework for green marketing.

Keywords: green marketing, environmental performance, environmental management, food processing, micro small medium enterprises, eco-labeling policy

INTRODUCTION

“The major cause of the continued deterioration of the global environment is the unsustainable pattern of production and consumption...”

– The United Nations Agenda 21 Report

The Philippine economic growth has a corresponding environmental cost. The progress of

our nation’s economy is anchored on the manufacturing and service companies that contribute to environmental degradation (Rounaghi, 2019). The attainment of economic development had a reverse impact on environmental preservation. One study provided an analysis of the continuing divergence of development and environment. The unsustainable development occurs because the manufacturing industries fail to provide solutions for pollution and depletion of the environment. Another is that

globalization put a toll on the environmental cost and the authorities did not consider promoting development while regulating the environment (Novek, 1992).

The food production industry contributes significantly to the depletion of natural resources and harmful impacts on the ecological system. The carbon footprints laid on earth from food processing operations cause greenhouse emissions that affect global warming contributing to the disruption of the environmental systems (Agustini, 2019). The 2012 Report on the Ecological Footprint of the Philippines presented sixty-one (61%) percent of the ecological footprint of households comes from the food sector (Global Footprint Network, 2012). Authorities and business owners are prompted to resolve the conflict of economic development and environmental degradation and opt for sustainable development as a solution to the said problem.

The emergence of the green marketing concept provides the means for sustainable development. It is the business efforts that consider monitoring and adapting to the environment in its production process by creating energy-efficient processes, improving pollution controls, and using recyclable and biodegradable packaging. These are important to integrate economic development and environmental protection. Environmentally friendly products are all part of green marketing, which leads to long-term development for our economy and environment (Choudhary, 2013).

For over twenty-five years various research about green marketing has been conducted and raised the need to develop, practice, and communicate the integration of environmental considerations in business operations to raise green marketing consciousness in the business industry (Kumar, 2016). Studies established that government policy has a moderating effect on the implementation of marketing strategies (Eneizan, 2019).

The research on green marketing for the business segment in the province of Bataan is scarce to provide information on the needed program to establish a concrete course of strategies. There is a need for environmental regulations' rationalization to create a developmental perception among business owners. Comprehensive environmental practices are not integrated into the MSME's conduct of business. Current research on the subject presented the ratio of the environmental practices of the food processing business that indicates the need to further encourage the sector to engage in green business activities for ecological preservation and sustainability.

This research aims to assess the food processing businesses in terms of environmental performance and environmental management. It explores the green marketing practices and regulation of food processing businesses in the province as a reference for assessment. The extent of public participation in the creation of regulation on green marketing was inquired, to know the perceptions of local government agencies and business owners. The study also aims to develop a local green marketing approach and strategy by conducting consultations with the business owners and authorities to create a regulatory framework for green marketing. A collaborative process of creating an environmental regulatory framework will provide ownership for the industry to perceive green marketing as a policy and advocacy among business owners.

OBJECTIVES OF THE STUDY

This study seeks to revisit the green marketing practices and regulations pertinent to food processing businesses. Additionally, it aims to assess these food processing enterprises with a dual focus: evaluating their environmental performance and scrutinizing their environmental

management practices. Moreover, the study delves into the exploration of the extent of public participation in the formulation of green marketing regulations. This exploration is grounded in the perceptions of local government agencies, shedding light on the role of public engagement in shaping environmentally conscious business practices within the food processing sector.

METHODOLOGY

The research process was part of the implementation of the college extension on Green Marketing as a research component of the project. The study used the exploratory sequential mixed methods design. The research method structure consists of three parts. Part 1 reviewed the green marketing practices and regulation of food processing businesses in Bataan. Part 2 assessed the food processing businesses in terms of environmental performance in terms of raw materials utilization, energy consumption, water conservation management, waste management, air emission and wastewater and management. Part 3 explored the extent of public participation in the creation of regulations on green marketing based on the perceptions of local government agencies and business owners.

For the quantitative part, the sample was determined using statistical G-Power Analysis Software. The sampling technique implemented cluster sampling wherein eleven municipalities and the city were selected as the clusters. From these clusters, the required number of samples were randomly chosen. Population and study locale include the registered food processing businesses in Bataan covering the eleven municipalities and the component city. Below is the total number of populations per municipality.

Table 1

Population of the Study

Municipality	Population	Proportion	Sample
Morong	5	0.02	3
Bagac	15	0.06	9
Dinalupihan	40	0.17	24
Hermosa	32	0.13	20
Orani	20	0.08	12
Samal	19	0.08	12
Abucay	14	0.06	9
Orion	18	0.07	11
Pilar	22	0.09	13
Limay	19	0.08	12
Mariveles	26	0.11	16
City			
Balanga	12	0.05	7
Total	242		148

For the qualitative method, it applied purposeful sampling, exploring the consultative development process based on the theoretical framework of public participation and systemic interduality. The inclusion criteria for the respondents are the business owners who attended the Green Marketing seminar and workshop and are willing to participate in the interview. Exclusion criteria for the narrative part are the business owners who did not attend the seminar-workshop for Green Marketing.

As a research component of the extension project, data gathering method for the quantitative part randomly selected respondents who attended the onsite Green Marketing conducted by the college based on the number of samples per municipality. For the qualitative part, respondents were purposely selected by conducting the interview after several days the extension project was implemented.

The data gathered using the questionnaire was coded, encoded, and statistically analyzed using statistical software called IBM-SPSS Statistics version 23. The data were analyzed using a weighted mean to assess the food processing businesses in terms of environmental management and environmental performance. The qualitative data gathered used thematic analysis to contextualize the narratives provided by the respondents.



RESULTS AND DISCUSSION

This section presents the results, analysis, and interpretation, of data relevant to formulating a local green marketing business environmental regulatory framework for Bataan MSME food processing.

1. Review of green marketing practices and regulation of food processing businesses in Bataan

The provincial environment regulations on businesses in the province are based on Republic Act 903, the Ecological Solid Waste Management Act of 2000. This provision stipulated the environmental management chapter of the Bataan environmental code from Bataan Sangunian Panlalawigan Ordinance 03, series of 2019. To highlight, in Section 63 of Article II labeled Solid Waste Management, its operative principles are segregation at source, maximum water reduction and diversion, greater stakeholder participation, and environmentally sound technology. Another, in Section 67 is the regulation of the use of the plastic bag and other non-environmentally acceptable (NEA) packaging materials. Further, section 74 is the regulation of establishments regarding environmental clearance (Bataan Provincial Council, 2019).

The city council of Balanga issued resolution number 113 series of 2019 encouraging the non-use of plastic bags every day in groceries, supermarkets, public markets, restaurants, fast-food chains, department stores, retail stores, and other similar establishments in the city of and endorsing the use of recyclable paper bags and/or biodegradable bags, baskets, and other reusable bags instead.

The proposed strategies presented in Bataan Ten-year Solid Waste Management Plan

for 2018-2027, the solid waste management system approaches focus on source reduction; collection; segregation, recycling, and composting; transfer; alternative technologies for residual wastes; disposal; special waste; and information, education and communication (IEC) (Sea Knowledge Bank, 2018).

The above environmental regulations and strategies are implemented in the business sector. In securing a business permit, orientation for solid waste management is being conducted to impose the system, strategies, and regulations.

2. Assessment of the food processing businesses in terms of environmental management and environmental performance

2.1. In terms of Raw materials utilization

Table 2

Environmental performance in terms of raw materials utilization

Item	Mean	Standard Deviation	Equivalent
1. Utilized raw materials in product development.	3.62	0.65	Always
2. Unused raw materials in product development <u>diverted</u> to use for something else.	2.65	1.08	Often
3. Natural or organic materials in product development.	3.25	0.93	Often
4. Raw materials used in packaging.	3.13	0.95	Often
5. In packaging, part of the unused raw materials can be used for something else.	2.70	1.06	Often
6. Biodegradable materials included in the packaging.	2.75	0.96	Often
Composite	3.02	0.38	Often

In Table 2, it is evident that the respondents have exhibited a considerable degree of variance in their assessments of environmental sustainability practices. The highest mean score was attributed to the item "Utilized raw materials in product development," registering a robust mean value of 3.62 and a standard deviation (SD) of 0.65. Conversely, the lowest mean score of 2.65, coupled with a relatively higher standard deviation



of 1.08, was associated with the item "Unused raw materials in product development diverted to use for something else." When we consider these findings in their entirety, they collectively yield a mean score of 3.02, accompanied by a tighter standard deviation of 0.38. This composite measure suggests that the respondents, on average, are effectively utilizing raw materials to a significant extent, falling within the 51%-75% range in terms of their environmental resource utilization practices.

2.2. In terms of Energy Consumption

Table 3

Environmental performance in terms of energy consumption

Item	Mean	Standard Deviation	Descriptive Equivalent
1. Make sure that all printers, scanners, microwaves, lights, air conditioners, and coffee vending machines are switched off during weekends or holidays.	3.64	0.73	Always
2. Purchase energy-efficient office equipment.	2.98	1.11	Often
3. Sensor lights can help to keep the lights on when needed, but off when they're not.	1.97	1.15	Sometimes
4. Use energy-efficient light bulbs (LED lights).	3.37	0.97	Always
5. Take advantage of natural sunlight.	2.73	1.15	Often
6. Power down computers and other office equipment at the end of the day.	3.41	1.00	Always
7. Get employees engaged in energy-efficient practices.	3.47	0.85	Always
8. Use laptops rather than computers.	2.23	1.11	Sometimes
Composite	2.98	0.62	Often

As depicted in Table 3, it is evident that respondents' attitudes and behaviors toward energy conservation exhibit a range of perspectives and practices. The highest mean score, standing at 3.64 with a standard deviation (SD) of 0.73, was attributed to the item "Make sure that all printers, scanners, microwaves, lights, air conditioners, coffee vending machines are switched off during weekends or holidays." This suggests a commendable level of compliance with energy-saving measures in this specific context. In contrast, the item "Sensor lights can help to keep the lights on when needed, but off when they're not" garnered the lowest mean score of 1.97,

accompanied by a relatively higher standard deviation of 1.15. This implies a greater divergence in respondents' opinions and practices regarding the use of sensor lights. When we consider the collective findings, they culminate in an overall mean score of 2.98, with a standard deviation of 0.62. This aggregated measure suggests that, on average, environmental performance in terms of energy consumption falls within the category of "often," indicating a moderate adherence to energy-saving practices among the surveyed respondents.

2.3. In terms of Water Conservation Management

Table 4

Environmental performance in terms of water conservation management

Item	Mean	Standard Deviation	Descriptive Equivalent
1. Implement simple, everyday water conservation techniques.	3.55	0.76	Always
2. Observe the water conservation plan.	3.39	0.80	Always
3. Work with employees and educate them about water conservation.	3.54	0.75	Always
4. Regularly assess water-consuming systems by checking for water leaks.	3.38	0.75	Always
5. Install water-saving devices.	2.42	1.21	Often
Composite	3.26	0.47	Always

As indicated in Table 4, it is evident that respondents' responses vary across different aspects of water conservation practices. The item "Use simple, everyday water-saving methods" received the highest average score, standing at 3.55, with a moderate standard deviation of 0.76. This suggests a relatively consistent consensus among respondents in favor of employing straightforward, routine methods to conserve water. In contrast, the item "Install water-efficient devices" garnered the lowest average mean of 2.42, with a larger standard deviation of 1.21. This indicates a more significant divergence in respondents' attitudes and actions related to the



installation of water-efficient devices. When we consider the overall assessment, the composite mean score of 3.26, accompanied by a smaller standard deviation of 0.47, signifies that environmental efforts in water conservation are consistently or always put into practice. This suggests a commendable level of adherence to water conservation measures among the surveyed individuals.

2.4. In terms of Waste Management

Table 5
Environmental performance in terms of waste management

Item	Mean	Standard Deviation	Descriptive Equivalent
1. Manage reuse, reduction, and recycling of waste materials.	3.01	1.01	Often
2. Exercise waste segregation.	3.58	0.73	Always
3. Practice proper waste disposal.	3.72	0.56	Always
4. Trash bins are plenty and properly manage.	3.56	0.69	Always
5. Communicate waste goals to the customers.	3.00	1.06	Often
6. Provide new employee training about the waste and recycling protocols inside the business.	3.26	0.81	Always
Composite	3.36	0.29	Always

Based on the data in Table 5, it is evident that the respondents' evaluations of waste management practices vary across different items. The item "Practice proper waste disposal" stands out with the highest mean of 3.72 and a relatively low standard deviation of 0.56. This indicates a consistent and well-accepted practice of proper waste disposal among the respondents. Conversely, the item "Communicate waste goals to the customers" received the lowest mean of 3.00, with a higher standard deviation of 1.06. This suggests a greater variability in respondents' views and actions regarding the communication of waste goals to customers. In an overarching view, the composite mean score of 3.36, accompanied by a smaller standard deviation of 0.29, implies that environmental performance in terms of waste management consistently reaches the "always" level. This suggests a high level of adherence to

waste management practices among the surveyed individuals.

Table 6
Environmental performance in terms of air emission

Item	Mean	Standard Deviation	Descriptive Equivalent
1. Contribute air pollutants in the operation of the business.	2.03	1.10	Sometimes
2. Minimize the use of products with chemicals.	3.11	1.07	Often
3. Use filters for chimneys.	2.53	1.29	Often
4. Use fans instead of Air conditioners.	3.58	0.72	Always
5. Service vehicles are well maintained and passed the air emission standards.	3.36	0.94	Always
Composite	2.92	0.63	Often

As displayed in Table 6, it is evident that the respondents' perspectives and practices related to air emission management exhibit a wide range of behaviors. The item "Use of fans instead of Air Conditioner" received the highest mean score of 3.58, with a standard deviation (SD) of 0.72, suggesting a prevalent preference for energy-efficient cooling methods. On the other hand, the item "Contribute air pollutants in the operation of the business" garnered the lowest mean score of 2.03, accompanied by a relatively high standard deviation of 1.10. This signifies a considerable disparity in respondents' views and actions concerning the contribution of air pollutants in business operations. When considering the overall assessment, the composite mean score of 2.92, along with a moderate standard deviation of 0.63, indicates that environmental performance in terms of air emissions management falls within the category of "often." This suggests that while there is a notable degree of adherence to air emission management practices, there is room for improvement in achieving more consistent environmental practices among the surveyed respondents.

2.5. In terms of Wastewater



Table 7
Environmental performance in terms of wastewater

Item	Mean	Standard Deviation	Descriptive Equivalent
1. Process/Operation of the business does not contribute pollutants to the water system.	3.20	1.04	Often
2. Water recycling and water reuse are practiced.	2.65	1.12	Often
3. Water drain system for soaps, sediment, chemicals, and other contaminated runoff lead to sanitary or storm sewer.	3.41	0.82	Always
4. Barrels and containers with any amount of hazardous material such as oil, and chemicals, are properly kept and disposed of to keep rainwater out.	3.56	0.79	Always
5. Train employees on the proper way of handling water pollutants.	3.51	0.75	Always
Composite	3.27	0.37	Always

As observed in Table 7, the data reveals a range of practices and attitudes among the respondents regarding wastewater management. The item with the highest mean, reaching 3.56, and a moderate standard deviation (SD) of 0.79, pertains to the proper storage and disposal of barrels and containers containing hazardous materials to prevent rainwater infiltration. This suggests a relatively consistent adherence to this particular wastewater management practice among the respondents. In contrast, the item with the lowest mean of 2.65, coupled with a higher standard deviation of 1.12, relates to the practice of water recycling and reuse. This indicates a greater diversity in respondents' opinions and practices concerning this aspect of wastewater management. In an overall context, the composite mean score of 3.27, along with a lower standard deviation of 0.37, suggests that environmental performance in terms of wastewater management consistently reaches the level of "always." This implies a high degree of compliance with wastewater management practices among the surveyed individuals.

3. Environmental management items as assessed by the respondents

As evident from the data in Table 8, it is clear that the respondents hold varying perspectives and practices in relation to environmental management. The highest mean score of 3.67, with a relatively low standard deviation (SD) of 0.55, is associated with the item

"Aware of the environmental regulations." This indicates a widespread awareness and understanding of environmental regulations among the respondents.

Table 8
Environmental management items as assessed by the respondents

Item	Mean	Standard Deviation	Descriptive Equivalent
1. Aware of the environmental regulations.	3.67	0.55	Always
2. Purchase eco-friendly equipment.	3.27	0.83	Always
3. Conduct Seminars/training for employees on environmental awareness.	3.15	0.88	Often
4. Measure the nature and extent of harm to the environment caused by the business.	3.25	0.81	Often
5. Evaluate how the business can manage or improve the condition of the environment.	3.27	0.76	Always
6. Identify the environmental impacts of the business.	3.28	0.77	Always
7. Set the environmental objectives and targets.	3.16	0.85	Often
8. Provide the operational and emergency procedures related to environmental matters.	3.24	0.81	Often
Composite	3.29	0.16	Always

In contrast, the item "Conduct Seminars/training for employees on environmental awareness" received the lowest mean score of 3.15, along with a higher standard deviation of 0.88. This suggests greater variability in respondents' opinions and actions regarding the conduct of seminars and training on environmental awareness for employees. When we consider the overall assessment, the composite mean score of 3.29, accompanied by a minimal standard deviation of 0.16, signifies that environmental management items consistently reach the "always" level. This implies a high degree of adherence to environmental management practices among the surveyed individuals.

4. Exploration of perception on the extent of public participation in the creation of regulation on green marketing based on the perceptions of local business owners and local government agencies

Thematic analysis of the interview contents of both local government agencies and business

owners provides a positive direction to pursue the formulation of a green marketing regulatory framework to institutionalize and operationalize its practice in the food processing sector. The qualitative study presented the items used to assess environmental performance and environmental management. The researchers asked the participants to use the result as a reference for the policy framework. The process of creating the policy was also inquired as a procedure to develop the environmental framework.

The results of the assessment of the food processing businesses in terms of environmental management and environmental performance presented to the officers of the provincial government regulating the business sector established the basis for the policy framework. As the LGU advocates the preservation and use of indigenous materials, the office desires to construct a policy that will institutionalize the practice of green marketing among food business owners. It will add to the branding of the Bataan products which will be another layer and that will be a higher level of marketability for the food processing industry. The results of the part 2 study confirm the feasibility of the policy concept of this research. Except for the items that will entail costs for the business owners. The policy should be focused on the practice of discipline and will not burden the businessmen with any financial compliance that will cause resistance from the target group.

As to the process of creating the policy framework, the office of the Provincial Cooperative and Development Office is very much willing to present the policy recommendation to the technical working group composed of the small and medium enterprise development council for evaluation for the possible creation of green marketing policy. This will be part of the branding scheme for the food products of Bataan.

The environment specialists of the Provincial Government Environment and natural resources office were also consulted on the viability of creating the policy framework. Presenting the composite mean of 3.29 of the items for assessment of environmental performance and environmental management of business operations practices, the descriptive equivalent Always connotes a good starting point to construct an environmental policy. Consultants provided possible regulations per item that will be measurable for the implementation of the policy concept.

The process for formulating the environmental framework was discussed and congruent with the recommendation of the governing office of the food processing sector. Consultation with the business owners on creating the policy framework, each item was discussed, and they provided positive compliance for each variable that will be the reference for the formulation of the regulation. The presentation of the policy concept has positive responses among business owners. They express willingness to have a regulation for green marketing and practice it in their business operations.

CONCLUSIONS

The results of the surveys and interviews created a unified analysis and framework from the government authorities, environmental experts, and business owners. The assessment of environmental performance and environmental management indicates good environmental practices among business owners. The government must uphold and institutionalize these practices to achieve a sustainable pattern of production and consumption. Designing a sustainable regulatory framework for the business sector will nurture the business ecosystem and attain sustainable development.



The consultations conducted to develop a local environmental policy used a deliberative and inclusion process through a model of discourse among stakeholders to obtain various perspectives on green marketing. The surveys and interviews conducted obtained collaborative ideas and provided the inclusion of meaningful involvement for effective decision-making both for business owners and government authorities. It applied the theories of public participation in developing an environmental regulatory framework. The surveys and interviews with business owners helped by having diversity and inclusion of multi perspectives of the participants. The participation of the experts delivered knowledge and values in the process of formulation. For government authorities, surveys and interviews confirmed the legitimacy concern in developing the regulatory framework. It provided knowledge on the issue of fairness of the procedure in public participation. The theory of systemic interduality applied in this research considered the two subsystems, the government, and the business owners that created a unified analysis framework to develop the environmental regulation.

RECOMMENDATIONS

The recommendation is to develop a training program not only for food processing businesses but to the local business community to provide a clear understanding of the concept. This will also provide a platform for a consultative development process to institutionalize the green business as a regulatory framework. It is a promising step to operationalize the green business practice in Bataan to achieve environmental resiliency and sustainability

REFERENCES

Agustini, M. (2019). *Green marketing: The context of Indonesia and the Philippines*. Mauritius: LAP Lambert Academic Publishing.

Balanga City Council Ordinance 113, Series of 2019. Balanga City, Bataan.

Choudhary, A., & Gokarn, S. (2013). Green marketing: A means for sustainable development. *Business and Economic Horizons*, 4, 26-32.

Eneizan, B., et al. (2019). Effects of green marketing strategy on firm financial performance: The moderating role of government policy. *Business and Economic Horizons*, 2019(2), 304-324.

Global Footprint Network. (2012). *A measure for resilience: 2012 Report on the Ecological Footprint of the Philippines*. Retrieved on August 24, 2015.

Kumar, P. (2016). State of green marketing research over 25 years (1990-2014). *Marketing Intelligence & Planning*, 34(1), 137-158.

Novek, J., & Kampen, K. (1992). Sustainable or unsustainable development? An Analysis of an Environmental Controversy. *The Canadian Journal of Sociology / Cahiers Canadiens de Sociologie*, 17(3), 249-273.

Rounaghi, M. M. (March 2019). Economic analysis of using green accounting and environmental accounting to identify environmental costs and sustainability items. *International Journal of Ethics and Systems*, 35(4), 504-512.

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