

“AN ASSESSMENT OF THE ECONOMIC EFFECT OF VALUE-ADDING ACTIVITIES IN THE PRODUCTION AND MARKETING SYSTEM OF SALT IN ILOCOS NORTE, PHILIPPINES: THE CASE OF PAGNASAHAN NORTE AGAS ASIN ASSOCIATION”

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INTRODUCTION

- Salt production in the Philippines remains rooted in the traditional practice of solar drying.
- Therefore, it is imperative that there is a need to explore the marketing system and value-adding specifications of salt production to meet market demands.
- The “ASIN Law” or the Republic Act 8172 (An Act Promoting Salt Iodization Nationwide and for Related Purposes) is one of the answers of the government in providing quality and iodine-fortified salt in the market and prevent the increasing cases of Iodine Deficiency Disorder (IDD) and chronic salt deprivation (Mannar as cited by Calixtro, 2019).
- Value-addition is the process of improving or enhancing products or services that raise their value before they are offered to the market for sale to increase the income of those who perform them.



INTRODUCTION

- In the case of the Philippine salt industry, the prices of salt vary depending on whether it is iodized or non-iodized (Delos Reyes et al, 2021)
- While iodization of salt eliminates the health complications associated with IDD, non-iodized salt still proliferates in the market due to its cheaper price. Additionally, the proper labeling and packaging of iodized salt is also crucial as iodine tends to evaporate if left unsealed hence defeating the purpose of iodization.
- In Ilocos Norte, salt farmers are using cooking methods to produce the more expensive refined salts. However, salt farmers are foregoing this practice and tend to pass iodization and product packaging to intermediaries as farmers are leaning toward producing non-iodized and unpackaged salts which are less costly to produce.



OBJECTIVES OF THE STUDY

General: Assess the economic benefits of the adoption of iodization and proper packaging practices of salt production in Ilocos Norte.

Specifically, this study aimed to:

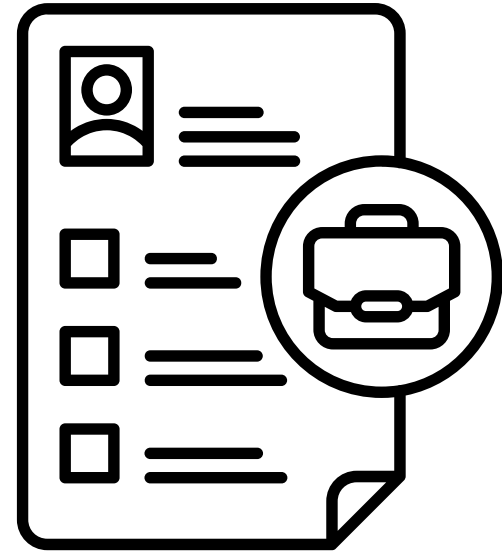
- 1** Characterize the salt producer-members of the Pagnasahan Norte Agas Asin Association (PNAAA);
- 2** Determine the production and marketing practices done by the salt producer-members;
- 3** To assess if iodized salt production is profitable; and
- 4** Provide appropriate recommendations based on the results of the study.



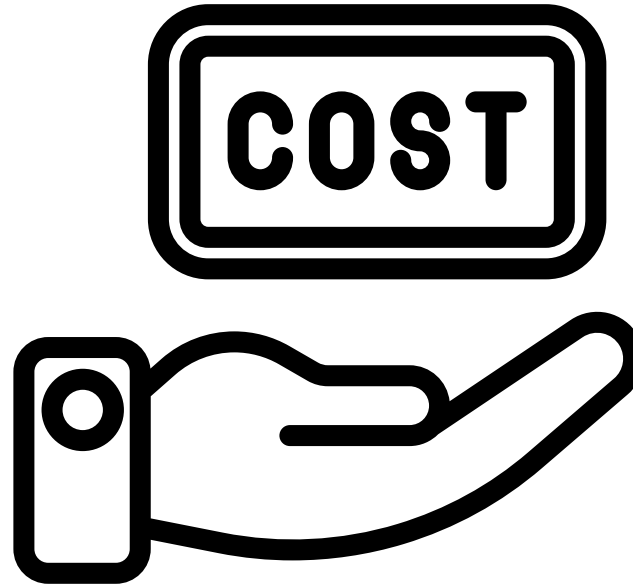
METHODOLOGY

- Ilocos Norte was chosen as the study area since it is one of the major salt-producing areas in Luzon. Primary data were collected through face-to-face interviews and key informant interviews using pre-tested questionnaires conducted during the harvest season of salt from March to April.
- In addition, a complete enumeration of target salt producers was employed for the study. Moreover, unprocessed data from the DAAE-UPLB CHED-funded project entitled “Value Chain Upgrading and Capacity Building for Salt Supply Chain Actors and Business Model Development for Village-Level Processors in the Philippines” covering the production period of 2019 was utilized.

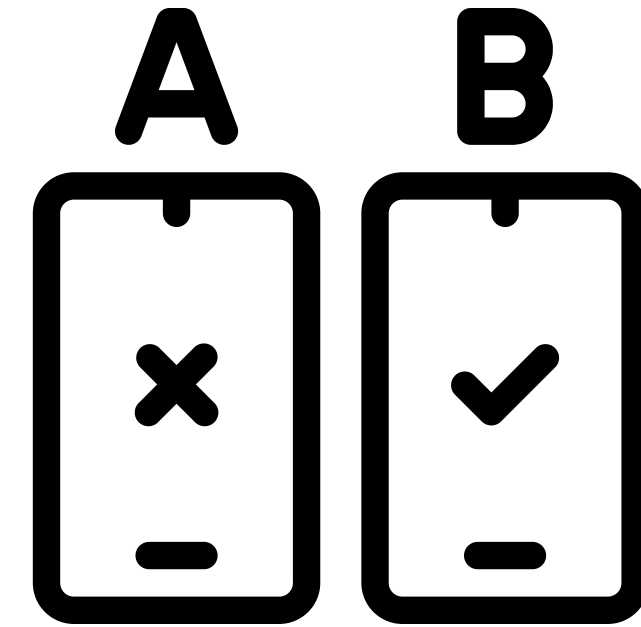
METHODOLOGY



DESCRIPTIVE ANALYSIS



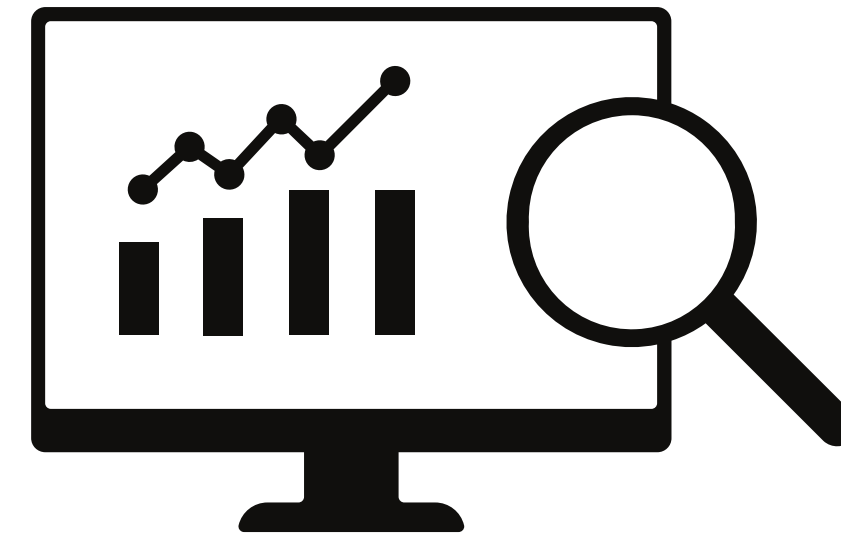
COST VOLUME PROFIT ANALYSIS (CVP)



PARTIAL BUDGET ANALYSIS



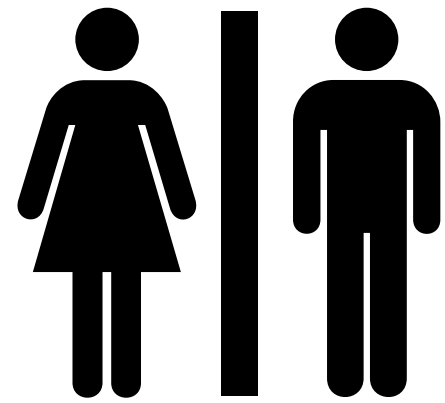
**FINANCIAL MEASURES (BREAKEVEN POINT,
MARGIN OF SAFETY, DEGREE OF OPERATING LEVERAGE)**



FISHER'S EXACT TEST

RESULTS AND DISCUSSIONS

Profile of the Salt Producer–Members of the Pagnasahan Norte Agas Asin Association (PINAAA).

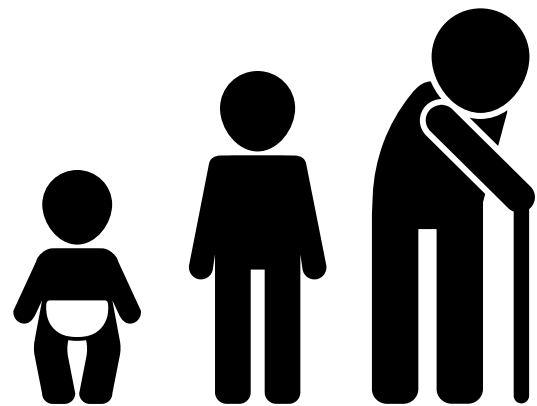


SEX

62.5% of the salt producer-members are women as salt production in the area is viewed as an alternative source of income that is commonly practiced by the married respondents (75%)



CIVIL STATUS



AGE

Their average age was 47 years with the highest proportion (37.5%) observed to belong to the age range of 41-50 years, indicating that the salt producers are still in their productive years

RESULTS AND DISCUSSIONS

Profile of the Salt Producer–Members of the Pagnasahan Norte Agas Asin Association (PINAAA).



EDUCATIONAL ATTAINMENT

Half (50%) of the members were elementary graduates which explains their lack of technical knowledge about value-adding practices. This is quite ironic as their average number of years in the salt industry was 14 years. According to them, salt iodization is unnecessary as their produce is still being patronized in their area, as supported by their average monthly income of ₱16,780.22, which is quite stable.



YEARS OF SALT FARMING



MONTHLY INCOME

RESULTS AND DISCUSSIONS

Production and Marketing Practices

Table 1. Distribution by marketing practice, 16 PINAAA salt producer-members, Badoc, Ilocos Norte, Philippines, 2019

Post-Harvest Practices	Frequency	Percentage
Iodization	8	50
Packaging	8	50
Storing	16	100
Transporting	8	50

Particulars	Non-Adopters	Adopters	Change
Sales (₱)	270,832.00	403,078.60	132,246.60
Price Per Sack (₱)	1,092.06	1,637.41	545.35
Less: Variable Expenses			
Wooden handled strainer	60.00	68.68	8.68
Sack	0	1,373.54	1,373.54
Firewood/combustibles	3,250.00	2,533.42	-716.58
Rake/Improvised Rake	150.00	152.62	2.62
Labor (non-cash)	4,953.00	4,067.20	-885.80
Selling	1,100.00	1,019.47	-80.53
Potassium Iodate	0	839.38	839.38
Transportation fee	0	1,401.01	1,401.01
Utilities	763.00	687.32	-75.68
Total Variable Expenses (₱)	10,276.00	12,142.63	1866.63
Change (%)			18.16
Contribution Margin (₱)	260,556.00	390,935.97	130,379.97
Change (%)			50.04
Less: Fixed Expense (Depreciation)			
Sprayer	0	7.63	7.63
Pail	30.00	22.89	-7.11
Baskets	150.00	114.46	-35.54
Salt iodization machine	0	1,144.62	1,144.62
Water pump	350.00	267.08	-82.92
Cooking vessel	300.00	381.54	81.54
Clay jars	150.00	114.46	35.54
Total Fixed Expenses	980.00	2,052.68	1,072.68
Change (%)			109.46
Net Operating Income	259,576.00	388,883.29	129,307.29
			49.81
Operating Profit Margin (%)	95.84	96.48	0.64

RESULTS AND DISCUSSIONS

Cost Volume Profit Analysis

Table 2. Comparative Contribution Income Statements (standardized to 248 sacks), 16 PINAAA salt producer-respondents, Badoc, Ilocos Norte, Philippines, 2019

RESULTS AND DISCUSSIONS



Break-Even Analysis

Table 3. Other financial indicators, 16 PINAAA salt producer-respondents, Badoc, Ilocos Norte, Philippines, 2019

Indicator	Computed Value
Unit sales to break-even (sacks)	2
Peso sales to break even (₱)	10.78
Margin of safety (₱)	403,067.82
Margin of safety in percentage	99.99
Margin of safety in units (sacks)	305
Degree of operating leverage	0.97

RESULTS AND DISCUSSIONS

Partial Budget Analysis

Table 4. Partial budget for the adoption of iodization practice per sack of salt of Pagnasahan Norte Agas Asin Association, 8 salt producers, 2019

POSITIVE IMPACTS		NEGATIVE IMPACTS			
A.	Added Returns	C.	Added Costs		
	Addition in revenue		110	Materials	45.87
				Labor	0.32
				Depreciation	1.75
			Selling	0.59	
B.	Reduced Costs	D.	Reduced Returns		
	TOTAL	110		TOTAL	48.53
NET INCOME		61.47			

RESULTS AND DISCUSSIONS

Partial Budget Analysis

Table 5. Partial budget for the adoption of packaging practice per sack of salt, 8 PINAAA, 8 salt producers, 2019

POSITIVE IMPACTS		NEGATIVE IMPACTS	
A.	Added Returns		
	Addition in revenue	19.18	
B.	Reduced Costs		
	TOTAL	19.18	
NET INCOME		9.38	
C.	Added Costs		
	Materials		4.50
	Labor		0.62
	Transportation fee		4.59
D.	Reduced Returns		
	TOTAL		9.80

RESULTS AND DISCUSSIONS

Partial Budget Analysis

Table 6. Partial budget for the simultaneous adoption of iodization and packaging practice per sack of salt of Pagnasahan Norte Agas Asin Association, 8 salt producers, 2019

POSITIVE IMPACTS		NEGATIVE IMPACTS	
A.	Added Returns	C.	Added Costs
	Addition in revenue		Materials
B.	Reduced Costs		Labor
			Transportation fee
TOTAL		TOTAL	
NET INCOME			

RESULTS AND DISCUSSIONS

Association between Income and Value-Adding Practices

Table 7. Fisher's Exact Test Result for association between income and the adoption of Value-Adding Practices of 16 salt producers-members of Pagnasahan Norte Agas Asin Association, Badoc, Ilocos Norte, Philippines, 2019

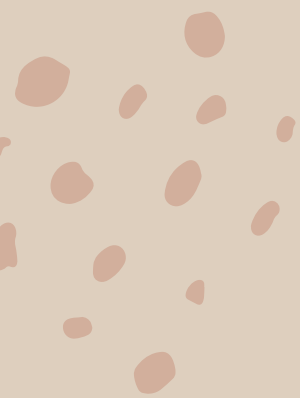
Monthly Income	Adopters	Non-Adopters	Total
Less than 5,000	-	5	5
5,001-10,000	3	1	4
10,001-20,000	4	2	6
≥20,001	1	-	1
Total	8	8	16
Fisher's Exact: 0.009			

IMPLICATIONS OF RESULTS AND RECOMMENDATION

- Results of the CVP Analysis revealed that further adoption of iodization and packaging will entail additional costs for the non-adopters but will also allow them to gain higher profits.
- This is further supported by the results of the partial budget analysis which showed that if the non-adopters chose to additionally adopt iodization in their current practices then it could give them an additional net income equivalent to ₱61.47 per sack of salt while in cases where the non-adopters chose to adopt packaging, they can earn an additional net income equal to ₱9.38 per sack.
- Furthermore, the analysis was also able to show the additional net income amounting to ₱296.47 per sack that the non-adopters can generate if they choose to adopt both iodization and packaging in their current practices.
- To validate the results of both CVP and Partial budget analysis, Fisher's Exact Test was used to determine if there is an association between the income and the value-adding practices which showed that there is a significant association between the two variables as evident by the fisher's exact value of 0.009.

IMPLICATIONS OF RESULTS AND RECOMMENDATION

- Based on the findings, it is recommended that non-adopter members of PINAAA (Pagnasahan Norte Agas Asin Association) adhere to the government's mandate to promote salt iodization in the country. Furthermore, the association's members should develop optimal production and marketing practices tailored to their specific needs. While the study primarily focused on iodization and packaging, salt producer members are encouraged to explore additional value-adding activities alongside iodization and packaging. However, before implementing these additional practices, a thorough profitability analysis should be conducted.
- It is also suggested to extend the research beyond the current scope, encompassing other provinces in the country to gain a comprehensive understanding of the Philippine Salt Industry. The study's results are limited to PINAAA members due to variations in production methods and practices among salt producers in the country. Additionally, it is recommended to conduct further studies that consider the entrepreneurial skills of salt producers. This is essential to ascertain whether the adoption of salt iodization is the exclusive factor contributing to changes in their income. Continuous research and exploration will contribute to a more nuanced understanding of the dynamics within the Philippine Salt Industry.



THANK YOU!