IOSR Journal of Environmental Science, Toxicology and Food Technology

IOSR Journals
International Organization
of Scientific Research

e-ISSN : 2319-2402 Volume : 12 Issue : 12 (Version - I) p-ISSN : 2319-2399

IOSR-JESTFT

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Citation

Abstract

Reference

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Paper Type	:	Research Paper
Title	:	Environmental and Hygiene Factors Affecting Diarrhea Occurrence in Enugu State, Nigeria
Country	:	Bangladesh
Authors	:	Nwachukwu, M. C || Uchegbu, S. N. || Onwuka, S. U.
doi>	:	**10.9790/2402-1212010107 (http://www.doi.org/)**

Abstract: Motivated by the high mortality and morbidity associated with diarrhea, and the increase in number of cases among children below five years, the paper analysed the environmental and hygiene factors affecting diarrhea occurrence in Enugu State and to fashion out some strategies that can be adopted to prevent and control the disease in the area. The study was to ascertain if there is a discernible pattern of environmental and hygiene factors affecting diarrhea occurrence in Enugu State from 2007 to 2016. A longitudinal survey was carried out. Data on diarrhea was collected from the seven District Hospitals in Enugu State which included Enugu Ezike District Hospital, Nsukka.....

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[2]. Microsoft Encarta (2009). 1993-2008 Microsoft Corporation.
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Citation

Abstract

Reference

Full PDF (../papers/Vol12- Issue 12/Version-1/B1212010815.pdf)

Paper Type	:	Research Paper
Title	:	Acceptability and Storage Stability of Biscuits Produced with Orange Peel and Pulp Flours
Country	:	Nigeria
Authors	:	Nwosu A. N. || Akubor P.I

doi> : 10.9790/2402-1212010815 (http://www.doi.org/)

Abstract: Two biscuit samples were produced by supplementing wheat flour with 10 % orange peel and 10 % orange pulp respectively. A third sample was produced with 100 % wheat flour which served as the control. The biscuit samples were stored at ambient temperature for six months. At monthly intervals samples were analyzed for moisture and peroxide values and every two months the following sensory properties were analyzed color, flavor, taste, texture and overall acceptability on a 9 - point hedonic scale (1= dislike extremely and 9 like extremely). The temperature and relative humidity of the storage environment were determined daily. Results showed that storage did not adversely affect the sensory properties of the biscuits. At the end of the storage period the sensory attributes were still rated high. There was no sign of mould growth, peroxide value was still low and there was no off flavor.

Keywords: Biscuit, orange, peel, pulp, sample, storage

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[2]. Weingartner, O. Bohm, M., Laufs, U. Controversial role of plant sterol esters in the management of hypercholesterolaemia. European Heart Journal 2008, 30(4): 404-409.
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Citation
Abstract
Reference
Full PDF (../papers/Vol12- Issue 12/Version-1/C1212011618.pdf)

Paper Type : Research Paper
Title : Adapting Sponge City Concept for Dhaka City
Country : Bangladesh
Authors : IsmatAra Khan || Roksana Afroz
doi> : 10.9790/2402-1212011618 (http://www.doi.org/)

Abstract: Dhaka, the capital city of Bangladesh, is one of the populous Mega Cities in the world. As the growth of urban population taking place at an exceptionally rapid rate, the city is unable to cope with changing situations due to their internal resource constraints and management limitations. In recent years Dhaka City is facing extensive water logging during the monsoon (May to October) as a common and regular problem of the city which corresponds water pollution, traffic congestion, air and noise pollution, solid waste disposal etc. Another main water related problem is

the water scarcity during summer as continuous depletion rate of ground water table. This paper focuses on how the sponge city concept can help the city to overcome from this situation for better aspect.

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Citation
Abstract
Reference
Full PDF (../papers/Vol12- Issue 12/Version-1/D1212011923.pdf)

Paper Type	:	Research Paper
Title	:	Financial Feasibility of Traditional Processing Industry: Study of Processing Dry Salted Fish of Tatah Mina Group, South Kalimantan
Country	:	Indonesia
Authors	:	Noor Latifah || Leila Ariyani Sofia || Emmy Lilimantik
doi>	:	**10.9790/2402-1212011923 (http://www.doi.org/)**

Abstract: The research is aimed to determined the financial feasibility of the dry salted fish processing industry of Tatah Mina Group, South Kalimantan. The production of dry salted fish need salt which fucntion as natural preservative and gave flavour to the product. Changes in the purchase price of salt would give an impact on production costs and affect the selling price. Result showed that the processing of dry salted fish is still feasible to continue for the next 5 years until the interest rate of 9% with absolute profit value is Rp. Rp 46,594,359.63, Net BCR of 1,64 and IRR of 31,633%. The advantages of dry salted fish processing business are not sensitive to increase of salt prices, but sensitive enough to decrease a product prices of 3%. The suggest of this research that need diversification of fish species for processing dry salted fish, efficient use of salt, and need to maintain the quality of dry salted fish to prevent a decline in selling prices.

Keywords: Dry Salted Fish, Salt, The Financial Business.

IOSR Journal of Environmental Science, Toxicology and Food Technology (IOSR-JESTFT)
e-ISSN: 2319-2402,p- ISSN: 2319-2399.Volume 12, Issue 12 Ver. I (December. 2018), PP 19-23
www.iosrjournals.org

Financial Feasibility of Traditional Processing Industry: Study of Processing Dry Salted Fish of Tatah Mina Group, South Kalimantan

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[2]*Faculty of Fishery and Marine, University of LambungMangkurat, Indonesia*
**Corresponding author: Leila Ariyani Sofia*

Abstract : *The research is aimed to determined the financial feasibility of the dry salted fish processing industry of Tatah Mina Group, South Kalimantan. The production of dry salted fish need salt which fucntion as natural preservative and gave flavour to the product. Changes in the purchase price of salt would give an impact on production costs and affect the selling price. Result showed that the processing of dry salted fish is still feasible to continue for the next 5 years until the interest rate of 9% with absolute profit value is Rp. Rp 46,594,359.63, Net BCR of 1,64 and IRR of 31,633%. The advantages of dry salted fish processing business are not sensitive to increase of salt prices, but sensitive enough to decrease a product prices of 3%. The suggest of this research that need diversification of fish species for processing dry salted fish, efficient use of salt, and need to maintain the quality of dry salted fish to prevent a decline in selling prices*.
Keywords:*Dry Salted Fish, Salt, The Financial Business.*

Date of Submission: 27-11-2018 Date of acceptance: 08-12-2018

I. Introduction

Indonesia is one of the countries with big fishery potential. In 2017, Indonesia's total fishery production reached 23.51 million tons consisting of 6.04 million tons of capture fisheries and 17.22 million tons of aquaculture. Indonesia also has a bigopportunity in fishery business. If seen from the data of ndonesian fish consumption in 2017, that reaches 46.49 Kg / Capita / Year. This condition supports the development of fisheries in Indonesia [1] (Ministry of Maritime Affairs and Fisheries, 2018). South Kalimantan is a province with a level of fish consumption above the average national fish consumption rate. outh Kalimantan province's fish consumption in 2017 reaches 50.20 Kg / Capita / Year. While fish production in South Kalimantan's province reached 418,614.0 tons [2] (South Kalimantan Marine and Fisheries Office, 2018). One of the regions that has fisheries potential in South Kalimantan is Banjar district. That fishery potential is used by people for capture and aquaculture activities. Production of fish by aquaculture 2016 reached 58,041.77 tons, while capture fisheries reached 9,084.0 tons. Also, there were fisheries product processing reaching 1,263,252 Kg in 2016.

Fish is one of the food sources for people in the world, providing 10% -15% of human food worldwide [3] (Wilson, 2007) and can providing livelihoods for millions of people [4] (Al-Jufaili MS and Opara LU , 2006). Population growth will change consumption demand, that can trigger global food shortages. One suggestion that can be given to provide consumption demand is by increasing aquaculture production [5] (Helena, 2014).The availability of fish in nature is still quite abundant and the cost is cheaper than other animal protein sources. However, fish has a high protein and water content that make very perishable [6] (Afrianto & Liviawaty, 1989). Fresh fish only can tolerate for 8 hours and then will begin to decrease the quality. Decreasing the quality of fish will cause a fish price decreasing, even if in large quantities such as in the harvest season it will cause losses to the fishermen. Therefore, to maintain the value of fish processing efforts are needed. Processing is a process of making products from raw materials by handling and preservation activities. The processing will make the material not easily damaged [7] (Abriana, 2017), so that food can be stored for a long period of time [8] (Moeljanto, 1992).

In some Asian countries, including Indonesia, the most type of fish processing is used traditional processing.Traditional fish processing still has the prospect of being developed because the processed fish production is only around 23-47%, while modern processing requirements are quite difficult to provide by small-scale fisheries, such as the supply of high-quality raw materials in uniform type and size,volume yang mencukupi kapasitas industry [9] (Heruwati, 2002). This prospect is supported by the availability of fish resources in the production center, high demand in the consumption center, simple technology, and many traditional processing home industries. However, traditional processed fish still has a bad image in the

consumers mind because of low quality and nutritional value, inconsistent functional properties, and nothing the quality and safety guarantees for consumers.The strategy of making small-scale agro-industry as a sustainable livelihood is by strengthening agricultural activities and protecting local agro-industrial production, availability of raw materials for agro industry and the guarantee of local markets for products [10] (Mckeller, 2012).

Processed fish with traditional methods that can be found in Banjar district are dry salted fish. Dry salted fish is the highest fish production in the districtof Banjar compared to others processing reaching 68.34% [11] (Department of Fisheries and Marine Banjar Regency, 2017).Salted fish dry is a product of fishery processing with raw materials of fish that have a salting treatment with or without boiling, and drying with a minimum 12% salt content of the weight of fish in the final product [12] (National Standardization Agency, 2016). Salt is a important component because it affects the quality of thedry salted fish product. If the salt that used is not appropriate, the quality / quality of dry salted fish is not good.

Salt is one of the most widely used ingredients in the food industry because it has low costs and varied characteristic. Salt has a preservative and antimicrobial effect as a direct consequence of sodium chloride capacity. In addition, sodium chloride is a flavor enhancer as an effect of different biochemical mechanisms [13] (William et al, 2011). Salt traders in South Kalimantan obtain salt from outside the region, which 60.89% from Surabaya City, 21.39% from Jakarta, and 2.02% from Bima City. Traders also received salt from distributors in Banjarmasin at 15.19% [14] (BPS, 2014). The availability of salt in South Kalimantan is very susceptible change if there are problems with distribution of salt in producer cities. Scarcity of salt will increasing the prices and will have an impact on the cost of processing dry salted fish. In 2017, the price of salt in the capital city of South Kalimantan province, Banjarmasin city is very fluctuating and tends to increase every month. Prices of salt in the three major markets in Banjarmasin city [15] (Ministry of Trade of the Republic of Indonesia, 2017).

Under these conditions fishermen have two choices of production adjustments. First, the concentration of salting fish still same or the concentration of fish salting is lower but giving risk for the quality of storage and the selling price of dry salted fish. Proper processing of fish is needed so that products produced have maximum added value and profitability [16] (Tawari and Abowei, 2011)

Tabel 5. Salt Prices in Three Big Traditional Market in Banjarmasin City (Ribu Rp) 2017

Traditional Market	Month											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Kalindo	5	6	6	6	6	7	9	8	6	8	10	10
Sederhana	5	6	6	6	6	7	9	8	6	8	10	10
Sentra Antasari	5	6	6	6	6	7	8	8	6	8	9	10

Ex : 1-12 = January - Desember

Source :[15] Ministry of Trade of Indonesia (2017)

This research aims to analyze the feasibility of developing a inland fishery business that managed by the Mina Tatah Group in Kertak Hanyar District. This study also aims to know about how sensitive the dry salted fish on changes in salt prices and the selling price of the products.

II. Result

Invenstation and business profits. Processing is a process of making product from raw materials accompanied with handling and preservation activities.Processing of dry salted fish has been done for a long time by groups around 10-30 years, and the skills of processing products are obtained from generation to generation. Generally, dry salted fish processing business is still managed traditionally with investment around Rp 16,654,000 – Rp 19,975.000 by a respondent. (Table 1). The items needed for processing operationals are simple with small amount, the average of usage period is around 1-5 years, quite easy to find in local markets such as containers, cutting tools, drying equipment, and marketing facilities (Table 2). The price of equipmentsare around Rp. 7,000 - Rp. 200,000, except for transportation of motorized vehicles with prince around Rp 16,000,000. Motorized vehicles are needed as a means of transportation, for buying raw materials and bringing processed products to markets in the Banjarmasin and surrounding areas,which is about 5-7 km from the village.

Table 1. The component of investment items and cost investment average of the Tatah Mina Group's processing dry salted fish

Component	unit	Unit Price (Rp)	Value (Rp)	Usage (yr)	Depreciation Value (Rp)
Kaki para-para	3.00	183,333.33	466,666.67	5.00	104,166.67
Para-para	17.00	18,375.00	295,333.33	1.00	295,333.33
Big basin	4.00	30,000.00	125,000.00	1.00	125,000.00
Average basin	5.00	20,000.00	105,000.00	1.00	105,000.00
Small basin	6.00	7,000.00	40,833.33	1.00	40,833.33

Bucket	2.00	7,000.00	12,833.33	1.00	12,833.33
keranjang tirisan	4.00	15,000.00	56,250.00	1.00	56,250.00
keranjang jualan	5.00	17,916.67	90,000.00	1.00	90,000.00
Parang	2.00	20,000.00	50,000.00	3.00	16,666.67
Asahan	1.00	20,000.00	20,000.00	2.00	10,000.00
Scales	2.00	254,166.67	466,666.67	2.00	233,333.33
Cool box	1.00	1,400,000.00	1,983,333.33	5.00	396,666.67
Water machine	1.00	430,000.00	430,000.00	4.00	107,500.00
Tarpaulin	1.00	55,000.00	55,000.00	1.00	55,000.00
Motorcycle	1.00	16,000,000.00	16,000,000.00	8.00	2,000,000.00
Total			20,196,916.67		3,648,583.33

While for each cycle production is needed the average cost reach Rp. 672,875.00 by household including the purchase of raw materials (fish) reached 79.41%, wages for weeding and drying (12.85%), purchasing salt as a preservative (3,97%), packaging materials (2.39%) and transportation costs (1.37%) (Table 3).The volume of dry salted fish production that can be produced by processors in one production cycle is around 4.83 kg - 47 kg, with total production per year reaching 1,227.67 kg - 10,669 kg.The production volume was able to give gross profit of Rp. 54,398,333.33 - Rp. 519,073,333.33 (Table 1).Then the gross pricewill be reduced with cost of production that was spent in one year then getting the business profitreached Rp 3,088,721.24 - Rp. 38,996,015,41.

Table 2. The average of fixed cost for dry salted fish processing Tatah Mina Group's (Per Year)

Component	Value (Rp)
Drying land rent	800,000.00
Depreciation of tools	1,877,359.36
Stall rent	874,281.89
Market retribution	153,226.14
Parking fees	143,626.94
Cleaning costs	31,651.14
Night watch fee	23,294.74
Household electricity	378,239.47
Total Cost	4,281,679.68

Table 3. The Average of Variabel Cost Dry Salted Fish Tatah Mina Group's

Component	Number		Unit Price (Rp)	Total Price (Rp)
Snakehead Fish	8.25	Kg	16,452.38	135,972.22
Sepat Swamp	33.71	Kg	8,013.89	262,847.22
Sepat siam	7.42	Kg	11,018.52	89,166.67
Climbing Perch Fish	4.28	Kg	8,388.89	46,361.11
Salt	5.67	Kg	4,694.44	26,694.44
Handling	51.11	Times	1,750.00	76,666.67
Drying	5.17	Times	6,875.00	24,583.33
Fuel	1.03	Liter	9,000.00	9,250.00
Packaging Plastic	1.61	Pack	10,000.00	16,111.11
Total variable cost per production				687,652.78
Total variable cost per year				116,213,319.44

Table 4. Production, Income and Profit of Dry Salted Fish Processing Tatah Mina Group's

Dry Salted Fish Production	Number (kg)	Unit Price (Rp)	Value (Rp)
Snakehead Fish	2.78	35,000.00	166,666.67
Sepat Swamp	11.47	38,555.56	432,305.56
Sepat siam	2.43	32,916.67	114,930.56
Climbing Perch Fish	1.47	7,361.11	58,472.22
Total production	18.15		772,375.00
Total production per year	3.067,82		130,531,375.00
Total operational cost per year			120,487,611.82
Profits per year			10,043,763.18

Business financial feasibility. Business feasibility is an important component that needs to be known by every businessmen. The analysis results of the financial feasibility of dry salted fish processing by Tatah Mina Group's for the next 5 years based on NVP criteria with a 7% and 9% discount rate can giving profits value absolute of Rp. 14,694,369.22 and Rp. 12,913,189.46 (Table 5), It means the processing dry salted fish business is worth for developing (Table 5). Also, based on Net BCR analysis, the value of the ratio is more than 1, it means the profit obtained is relatively higher than the costs for production. Meanwhile, the results of the IRR analysis show that

the profits obtained at break even in interest rate of 31.63% so that is more than credit interest rate small business
(7%). Therefore, the processing business managed by Tatah Mina Group, financially is feasible to continue for developing in the long term.
The results of the sensitivity of business profits are 20%, 40%, and 100% showing that the benefits obtained and the relative benefits, also estimating of interest rate giving financial conditions that still give benefit for Tatah Mina Group (Table 6). Therefore, business profits are not sensitive to the increasing of salt prices. However, the decline in the price of dry salted fish by 3% actually causes the value of various investment criteria that used is loss. So, the profits are very sensitive to the decline on product prices.

Table 5. Financial feasibility of the Mina Tatah Group's dry salted fish processing business according to investment criteria within 5 years

Investation Criteria	Value	Feasibility
NVP i = 7% (Rp)	14,694,369.22	NPV > 0, business is feasible to run
NPV i = 9% (Rp)	12,913,189.46	NPV > 0, business is feasible to run
Net BCR i = 7%	1.73	Net BCR > 1, business is feasible to run
Net BCR i = 9%	1.64	Net BCR > 1, business is feasible to run
IRR (%)	31.63	IRR >credit interest, worth trying

Table 6. The sensitivity level of the dry salted fish processing business Mina Tatah Group's in various alternatives for increasing salt prices and decreasing product prices

Change	Parameter value				
	NPV 7% (Rp)	NPV 9% (Rp)	Net BCR 7%	Net BCR 9%	IRR (%)
Incerase in salt price 20%	11,058,473.59	9,463,997.99	1.55	1.47	25.44
Incerase in salt price40%	7,323,148.17	5,920,482.47	1.36	1.29	19.84
Incerase in salt price100%	- 3,882,828.10	- 4,710,064.09	0.81	0.77	5.35
Decrease of product price 3%	107,751.09	-924,402.15	1.01	0.95	7.21

III. Discussion

Generally the number of workdays within one month is 10-30 days in 6-10 months a year or with a range of production cycles 155 - 254 times per year. The processing of dry salted fish, mainly made from raw materials, cannot be producing every day because it still depends on the availability of raw materials, so that daily production can change. The types of dry salted fish produced by the processors are snakehead, sepat swamp, sepat siam and climbing perch fish because the prices of dry salted fish products from that four types of fish are quite high, ranging from Rp. 25,000 - Rp. 60,000 / kg. While the volume of dry salted fish production by the type of fish is quite varied because

it depends on the availability of fish caught by fishermen.The raw material of fresh fish such as sepat swamp and sepat siam is usually purchased by processors from local fishermen in the waters around the village. While, snakehead and climbing perch fish are purchased by processors at the freshwater fish landing (PPI) in Banjarmasin City.

The procedure for processing dried fish by members are (1) cleaning the fish by weeding, discarding the stomach, then washing until clean; (2) salting with dry salting method, where the clean fish is put in a container and then sprinkled with pure salt (NaCl content> 90%) with a ratio of fish volume and salt to small fish 10: 1, medium fish 10: 1.5, and big fish 10: 3; then left the fish to stand for ± 15-24 hours; (3) drying, the salted fish are washed again, then dried on the para-para and exposed to direct sunlight, also being reversed for drying fish evenly. The drying time on the size of the fish, small and medium fish takes 1 day, and large fish takes 3-4 days. The fish processed by group members has not been packaged and labeled. Labeling is needed to make consumers know the attributes of the product. Labeling also serves to increase consumer confidence in the product [18] (Shida and Joao, 2007). At present there is a shift in the market from homegeneous commodities to a variety of commodities. Consumers ask for product quality and safety. The quality and safety of the product is illustrated by the certificate and product label [19] (Thomas et al, 2001).

Theoretically, profits are determined by production, selling prices and production costs. Production is a factor that can be controlled by producers, but prices are formed by market mechanisms [20] (Sutarni, 2013).The range of benefits obtained by processors is quite wide among others, caused by the variation of operational production per household and operational capital owned by the processor. Some processors usually do not carry out the producing activities on Sundays and feast day because want to rest with family. Also, when the peak of the rainy season (around October - December) usually some processors do not produce salted fish because difficult to get raw materials and expensive, beside the weather is not good for the drying process because still need sunlight. The benefits from processing dry salted fish by freshwater fish are greater than sea

water fish.But if viewed from the IRR value of the two processing, there is no big difference between that two. Comparison of benefits can be seen as follows:

Table 7. Feasibility Analysis of Processing Dry Salted Fish

ProcessedType	Profits	NPV	BCR	IRR
Dry salted fish (freshwater fish)	Rp. 10,043,763.18	Rp. 12,913,189.46	1,64	31,63%
Dry salted fish (marine fish)*	Rp. 3,990,000.00	Rp. 162,770,000.00	1,49	33.48%

[21]*) Sofia, 2018

IV. Conclusion

Processing of dry salted fish managed by Tatah Mina group is good to continou for the next 5 years with interest rate 9%, profit value of Rp 10,043,763.18, net BCR value of 31,63%, and IRR of 31,63%. The advantage of dry salted fish processing business are not sensitive to rising of salted prices, but sensitive enough to decrease price of product 3%. The result of research suggest to maintain the feasibility of processing dry salted fish in the mina management group. salt, and maintain the quality of dry salted fish to prevent price setback.

Acknowledgements

The researcher said to thank you for fisheries and marine agency, Banjar Regency and Fisheries Field Extension Officers had given the information and field assistance for this research, as well as Mina Tatah Group for information and cooperation

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