THE IMPACT OF HOUSEHOLD INCOME ON DRIED FISH CONSUMPTION IN SRI LANKA

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ABSTRACT- Dried fish plays an important role in human nutrition in Sri Lanka by supplying more than 60 percent of the total animal protein intake for the populace. Despite of the high consumption of fish and chicken, dried fish remains at the third place against the increasing prices. Dried fish prices have increased drastically from 2012 in compared to fish and chicken prices where the later remains relatively constant during the period. The consumption and expenditure patterns of chicken, fish and dried fish (the main animal protein sources except egg and dairy) differ in relation to the mean income of respective expenditure deciles; a categorization of socioeconomic status by dividing the population into 10 income groups from lowest income (1) to the highest income group (10) based on the expenditure pattern. This study explores the relationship between the level of dried fish consumption and expenditure over mean income of each expenditure deciles. A quantitative approach was followed drawing secondary data from Department of Census & Statistics and Ministry of Fisheries & Aquatic Resource Development. Monthly average household consumption quantity (g) and expenditure (Rs.) of commonly used dried fish varieties [skipjack tuna *(Katsuwonus pelamis)* and dried sprat (*Stolephorus sp.*)], fresh marine fish varieties [skipjack tuna and yellowfin tuna (*Thunnus albacares*)], and chicken were considered for the analysis during 2006-2016. Pearson correlation coefficient and income elasticity analyses were adopted using SPSS 21. Higher percentage share (36%<) of dried fish expenditure is captured by 1-4 income range of expenditure deciles that counts on 1-3 for consumption (43%<). In contrast, chicken is highly consumed (39%<) at higher income households (4-10). Results reveals that the analyzed dried fish varieties, which are highly consumed in Sri Lanka bears lower income elasticity of demand, which is (Sprats- 0.55 and Skipjack tuna- 0.56) less than 01 while chicken shows 1.06. A strong positive correlation between percentage share of chicken consumption (0.777)/ expenditure (0.802) while negative correlation with percentage share of dried sprats (-0.743)/ dried skipjack tuna (-0.798) consumption are observed against mean income in each expenditure deciles. In conclusion, the dried fish act as the main animal protein source for lower income while chicken serves for the higher income households. Income elasticity of demand indicates all observed varieties as normal goods except chicken, which are luxury goods. Therefore, decisions and policies on pricing and marketing of dried fish need to be addressed in favor of the lower income population in the country whose nutritional security highly depends on dried fish consumption, as an animal protein and micro nutrient sources

Key words: Consumption, dried fish, expenditure deciles, income elasticity of demand,

1. INTRODUCTION

-Dried fish plays a major role in human nutrition in Sri Lanka by supplying more than 60 percent of the total animal protein intake (Johnson *et al*, 2007). Information on current dried fish consumption patterns and how they are likely to change as prices and incomes change is required to assess the nutritional intake pattern, welfare and distributional impacts of technological change, infrastructure development and economic policies (Koralagama *et al*, 2021).

-The expenditure and consumption analysis over different income level and income elasticity analysis for major animal protein sources including dried fish in developed countries are not applicable in developing countries due to lack of data. Although, there are not considerable attempts had been conducted to analyze on dried fish consumption and expenditure over different income levels which are important to safeguard both consumers and producers while attaining the food security (Blades *et al*, 2008; Kandeepan *et al*, 2016).

Objective- To comparison of dried fish consumption over mean income levels of each expenditure deciles in Sri Lanka toward policy measures

2. METHODOLOGY

Available secondary data on dried skipjack tuna *(Katsuwonus pelamis)*, dried sprats *(Stolephorus sp.),* chicken, skipjack tuna and yellowfin tuna *(Thunnus albacares)* fresh fish were considered for the analysis since these are the highly consuming animal protein sources which secondary data available in Sri Lanka. Average monthly household expenditure (Rs.) and consumption (g) data over mean income in each expenditure deciles available at Household Income and Expenditure Survey reports from Department of Census and Statistics were used as the main data source for the analysis for the year 2005/06, 2009/10, 2012/13 and 2016. Ministry of Fisheries and Aquatic Resource Development and Hector Kobbekaduwa Agrarian Research and Training Institute were the other main secondary data sources. Data were analyzed using both descriptive and inferential statistical methods. Percentage household consumption and expenditure of dried fish, chicken and fresh fish out of total average household consumption and expenditure were calculated for the generalized and to extract the clear variation. After that, all percentage value of observed protein sources in each year were converted to grand average percentage and shown in the bar chart. Further, inferential data analysis methods were applied as Pearson correlation coefficient analysis and income elasticity analysis by using SPSS 21 version. Data has been presented qualitatively for better understanding.

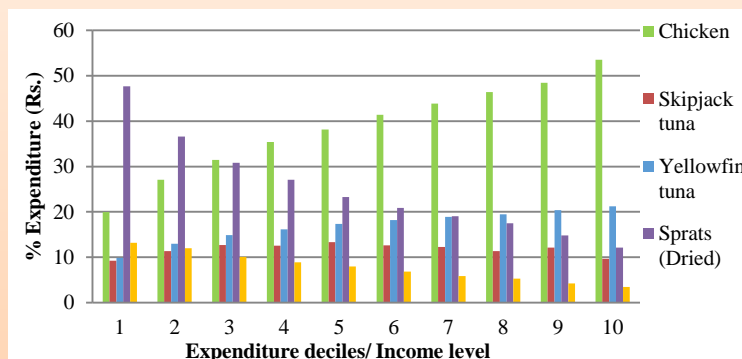## 3. RESULTS AND DISCUSSION

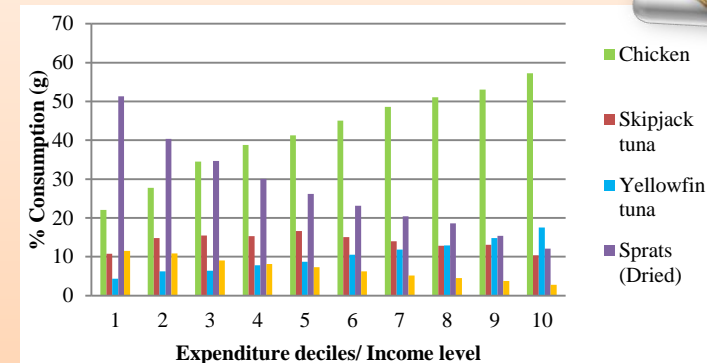Figure 01: Percentage expenditure of different animal protein sources

Figure 02: Percentage consumption of different animal protein sources

-The income elasticity of demand revealed, chicken (1.06) and yellow fin tuna (1.07) are shown more than 01 income elasticity, dried fish varieties (sprats- 0.55 , skipjack tuna- 0.56) and fresh skipjack tuna (0.97) are shown less than 01 income elasticity value in terms of both household expenditure and consumption. Based on that, chicken and yellowfin tuna can be identified as luxury goods. All observed dried fish varieties and fresh skipjack tuna fish act as normal goods. The same results are shown in Bangladesh within the study of Dey, (2000).

-Correlation coefficient analysis of percentage household expenditure of each protein sources against mean income of each income quintiles revealed that Strong positive co-relation (0.802) between percentage expenditure of chicken and each income quintiles. Further, it is revealed the strong negative correlation between the percentage expenditure of each dried fish varieties [Sprats (-0.718) and skipjack tuna (-0.778)] and income. Correlation coefficient analysis of percentage household consumption of each protein sources against mean income of each income quintiles revealed that strong positive correlation between chicken (0.777) consumption against income while strong negative correlation between dried fish (sprats -0.743 and skipjack tuna -0.798) consumption against mean income.

4. CONCLUSION

Study explores dried fish as the major animal protein sources in low-income communities while the chicken in high-income communities out of observed protein sources. Fish was utilized by both parties fairly. Peoples tend to eat chicken than dried fish with increasing income. Thus, the interactive governance mechanism is suggested to identify this bottleneck to establish fair food security among high income and low-income people. Further, decisions and policies on pricing and marketing of dried fish need to be addressed in favor of the lower income population.

5. REFERENCES

-Blades, M., Yıldırım, İ. and Ceylan, M., 2008.Urban and rural households' fresh chicken meat consumption behaviors in Turkey. Nutrition & Food Science.6(1). 420-428
-Dey, M.M., 2000. Analysis of demand for fish in Bangladesh. Aquaculture Economics & Management, 4(1).63-81.
-Jónsson, Á.,Finnbogadóttir, G.A., Porkelsson, G., Magnússon, H., Reykdal, Ó. and Arason, S., 2007. Dried fish as health food. Published by SkyrslaMatis, 10 (1).32-07.
-Kandeepan, K., Balakumar, S. and Arasaratnam, V., 2016. Nutritional status and food insecurity among the children in Northern Sri Lanka. Procedia food science, 6(1).220-224.
-Koralagama DN, Wickrama SL and Adikary A 2021 A Preliminary Analysis of the Social Economy of Dried Fish in Sri Lanka.Dried Fish Matters.University of Ruhuna, Matara. https://api.zotero.org/users/4955564/items/GEP3CAJD/file/view