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# INSIGHTS INTO EXPANSION: A SWOT ANALYSIS & NEED ASSESSMENT OF TAPIOCA MICRO FOOD PROCESSING INDUSTRIES IN SALEM DISTRICT, TAMIL NADU

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## ABSTRACT

Tapioca is a significant crop in Tamil Nadu, India, with Namakkal, Salem, and Kallakurichi being the top producers, with Salem District contributing 13.36%. Micro processing industries play a pivotal role in the economic advancement of Tamil Nadu, significantly contributing to the generation of employment opportunities, revenue, and general economic growth. While the industry study revealed strengthen like naturally formed clusters, successful marketing efforts, and easy access to financial institutions and new technologies, there are also weaknesses like challenges with raw material availability, declining cultivation rates, and environmental concerns. Opportunities for growth include increasing sago consumption, developing value-added products, effective branding strategies, and exploring potential by-products. Threats include competition from new products and imports, high customer expectations, and the use of maize starch as a substitute. Challenges in the industry include the need for harvesting machinery on agricultural farms and processing equipment in sago industries, as well as limited access to institutional finance. Increasing marketing efforts to expand the market for sago and starch products in India, particularly in Tamil Nadu could be beneficial.

**Keywords:** Tapioca, Micro Industries, Processing, SWOT Analysis, Need Assessment

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## 1. INTRODUCTION

Tapioca is a versatile tuber crop with substantial economic importance, serving as a key raw material for a wide range of industrial products as well as a popular

food source for both humans and animals (Abotbina, 2022). From starch and sago to glucose, dextrin, gums, and fructose syrup, tapioca can be processed into various high-value industrial goods. These products cater to the growing demand in several industries, making tapioca a valuable commodity in the market.

Salem has long been recognized as the global hub for starch and sago production. The industry experienced a significant surge during World War II when imports from the Far East were disrupted (Linder, 2017). The strategic location of Salem, with its abundant sunshine throughout the year, cost-effective labor force, and access to a diverse range of raw materials, has played a pivotal role in the growth of tapioca-based products. This region has gained international acclaim for its high-quality tapioca products. Tamil Nadu produces 33,30,275 tons of tapioca annually on an 88,683-ha area, with an average productivity of 37.55 t/ha in 2022–2023 (Season and Crop Report, 2022–2023; Tamil Nadu). Most tapioca is grown in Namakkal (20.16%), next in Kallakurichi (17.465%) and Salem (13.36%), making up roughly 50.98% of the state's output in the five years ending in 2022–2023.

Tamil Nadu is the most productive state in India for tapioca production, with 33,30,275 tons in 2022-2023. Kerala and Andhra Pradesh follow with 23,90,395 tons and 47,124 tons respectively. In terms of tapioca output and cultivation area, Tamil Nadu leads the country. The districts of Namakkal, Salem, and Kallakurichi contribute 48% of the total output. Improved transportation of raw materials to processing units in these districts could benefit the tapioca industry in these areas. According to, Season and Crop Report-2022-2023, Tamil Nadu states that 11,096 hectares in Salem District alone accounted for 12% of the state's tapioca area in a five-year average that ended in 2022–2023 and produced 13.36% of the state's production, which is the raw material for the sago businesses. According to Ghosh (2010), the cultivation and processing of crops originating from certain areas is a means of promoting agro-processed goods. For the tapioca-based micro food processing businesses to operate sustainably, tapioca processing facilities might be created, centralizing these regions.

Although there are tapioca processing and production facilities for various value-added products such as starch, sago, alcohol, animal feed, and wafers, among others, improved cultivation through good agricultural practices is required to meet the quality raw material requirements in the tapioca value chain for the production and processing of tapioca agro-based products (Krishna Kumar, 2021). For this reason, farmers should be encouraged to plant high-yielding tapioca crop varieties in order to maximize the export potential.

Hence, a comprehensive strengths, weaknesses, opportunities, and threats (SWOT) analysis was imperative to examine the Tapioca micro food processing industries and pinpoint its strengths and vulnerabilities. The SWOT analysis and gap study carried out during the survey of small-scale processing industries in the tapioca-based cluster in Salem district. This insight makes us wonder how newly developed and developing technologies may close these gaps and better match the nutritional needs of food products. Finally, we carried out a comprehensive analysis of the deficit and requirement for micro food processing enterprises, particularly in the Salem district. We intend to offer insightful information by illuminating these crucial areas, which can guide future tactics and developments in the sector.

## 2. METHODOLOGY

The study is based on Primary survey taken during the year 2023-24 in Salem district in selected blocks of Attur, Gangavalli and Thalaivasal. A systematic

approach was used to gather the data on around 75 sago micro food processing firms in and around the Salem district. The selection method of micro food processing firms involved snowball sampling. This study's main foundations were a SWOT analysis and need assessment of the small-scale tapioca processing sectors. For, need assessment study detailed comprehensive survey approach was carried out to gather the details about sago processing industries. By combining opportunities and threats from the environment with an organizations or project's strengths and weaknesses, SWOT analysis effectively finds both external and internal indicators. The organization's forces are reflected in its strengths. Weaknesses also signify adverse effects that may have an impact on the service quality or added value of the product. Opportunities are resources that a company can make use of to its benefit (Bennis B, 2023). Furthermore, all unsuitable outside occurrences that have the potential to damage the ecosystem are threats.

The practice of systematically identified internal and external issues in order to develop a plan for the management process is known as SWOT analysis. The rationale behind the analysis is to minimize threats (T) and weaknesses (W) while maximizing opportunities (O) and strengths (S). In order to address the issues, the growth of tapioca processing industry, strategies were required. The SWOT analysis-derived plan serves as a tool to accomplish goals pertaining to the priority for resource allocation and follow-up activities. Environmental analysis could help identify opportunities, threats, and strengths and weaknesses in order to develop an effective strategy (Rozi, 2023). The implementation of the SWOT concept in agriculture sector has been resulted in significant changes. In most nations, when it is used well, it has been increased production from subsistence to commercial agriculture (Onyema, 2013).

## 3. RESULT AND DISCUSSION

### 3.1. SWOT ANALYSIS FOR TAPIOCA MICRO FOOD PROCESSING INDUSTRIES IN SALEM DISTRICT

The results of the SWOT Analysis conducted on the Tapioca micro food processing industries in Salem district have revealed key insights that can help address existing gaps, enhance strengths, capitalize on opportunities, and mitigate weaknesses. By leveraging these findings, the industry can strategically position itself for sustainable growth and success.

## 4. STRENGTHS OF TAPIOCA INDUSTRY IN SALEM DISTRICT

- This cluster has naturally evolved over time, showcasing the resilience and adaptability of the businesses within it.
- The presence of SAGOSERVE in Salem has significantly enhanced the marketing efforts of the cluster's products, leading to increased visibility and sales.
- The abundance of traders from the northern states plays a crucial role in our market analysis, providing valuable insights into consumer preferences and trends.
- The presence of commercial and cooperative banks within the cluster is vital for addressing the financial needs of businesses, ensuring access to credit and capital for growth and expansion (Yulianto, 2020).

- The entrepreneurs in this cluster exhibit a remarkable ability to embrace new technologies, positioning themselves as industry leaders who are quick to adopt and leverage emerging innovations.
- A new wave of educated entrepreneurs is entering the sago and starch production sector, bringing fresh ideas and a commitment to producing high-quality products that meet the demands of the modern food industry.

## 5. WEAKNESSES OF TAPIOCA INDUSTRY IN SALEM DISTRICT

- Some of the challenges faced by the sago industry include the non-availability of quality raw materials throughout the year, leading to underutilization of capacity (kusnandar, 2016).
- Additionally, the area of tapioca cultivation has decreased over time, exacerbating the issue.
- Environmental concerns arise from sago processing units, and there is a lack of product diversification within the industry (Aswani, 2023).
- Furthermore, the quality of sago products is declining due to the improper use of chemicals, and many factories still rely on primitive technology (Rozi, 2022).
- Unhygienic processing practices are also a concern, impacting the overall quality of the products (kusnandar, 2016).
- The high cost of electricity further adds to the operational expenses of sago manufacturers (Yulianto, 2020).
- Moreover, the industry lacks access to cost-effective modern processing methods, hindering efficiency and productivity (Gautam, 2019).
- Additionally, there is a lack of understanding of market trends and consumption patterns, limiting the industry's ability to adapt and grow.

## 6. OPPORTUNITIES OF TAPIOCA INDUSTRY IN SALEM DISTRICT

- The consumption of sago can be significantly increased through strategic marketing efforts.
- Various sago products such as wafers, pappads, vermicelli, and salty snacks can be effectively promoted to diversify the market (Rozi, 2022).
- Developing value-added products from sago starch, such as modified starches, oxidized starches, glucose, fructose, and gums, can lead to higher profitability.
- Implementing branding strategies will enhance the perceived value of the products within the cluster.
- Utilizing methane gas for electricity generation can help reduce overall electricity costs.
- Exploring the use of thippi by-products as cattle feed and for methane production can be a valuable initiative.
- Standardizing the procurement of raw materials can streamline operations and reduce the need for intermediaries.

- Collaborating with a consortium of manufacturers for input purchases can help lower costs and improve efficiency (Rozi, 2022).

## 7. THREATS OF TAPIOCA INDUSTRY IN SALEM DISTRICT

- The introduction of new products and influx of cheap imports have the potential to diminish market opportunities (kusnandar, 2016).
- Customers have high expectations regarding both quality and pricing.
- There is a lack of trust among the various actors within the cluster (Aswani, 2023).
- The emergence of maize starch as a viable substitute for sago starch is an evolving trend.

In the realm of business, it is crucial to stay attuned to market shifts and consumer demands. The introduction of new products and cheap imports can impact market potential, while customers consistently expect high quality at competitive prices. Building trust among cluster actors is essential for fostering collaboration and success. Additionally, the evolution of maize starch as a substitute for sago starch presents new opportunities for innovation and growth. Stay informed and adaptable to navigate these dynamic market forces effectively.

## 8. NEED ASSESSMENT OF TAPIOCA PROCESSING INDUSTRIES IN SALEM DISTRICT

The difficulties encountered by the Salem district's tapioca micro food processing enterprises have been made clear by the findings of the needs assessment research. The purpose of this research is to solve these issues, meet their requirements, and strengthen their gaps and prospects for advancement.

## 9. TECHNOLOGICAL NEED

In the production sector, farmers are experiencing a shortage of labour for tapioca harvesting and are expressing a need for machinery to assist with the harvesting process (Gautam, 2019). The pricing of tapioca is determined by the moisture and starch content of the tubers. To effectively manage the large quantities of tapioca during pricing, farmers are requesting digital point scales with higher capacities.

Additionally, sago industries are facing challenges due to the lack of machinery with higher capacity point scales for quality analysis (Rana, 2017). One of the main obstacles reported by sago industries is the absence of low-cost prototype machinery for sago processing.

## 10. FINANCIAL NEED

The cluster benefits from a strong network of commercial banks (Yulianto, 2020). However, only few of industries have been able to access institutional finance, leaving a significant gap between credit demand and availability (Gautam, 2019). This issue could be resolved by extending credit for machinery purchases as well.

## 11. INSTITUTIONAL NEED

The micro sago entrepreneurs have the opportunity to expand their product offerings by leveraging the technical support provided by institutions such as the Home Science Department of Tamil Nadu Agricultural University. Unfortunately, the sago factory owners currently lack any effective connections with this valuable resource.

## 12. MARKETING NEED

The consumption of starch and sago is primarily concentrated in a few northern states of India, with Tamil Nadu showing particularly low consumption rates. It is imperative that concerted marketing efforts be implemented to expand the market for sago and starch products not only in the rest of India but also in Tamil Nadu (Rana, 2017).

## 13. CONCLUSION

An actual obstacle faced by tapioca agro-industry in Salem district, it is clear that there is great potential for the sago industry in Salem District. By capitalizing on strengths, addressing weaknesses, and seizing opportunities, stakeholders can work towards a more sustainable and successful future for the industry. Improved agricultural techniques and greater support for farmers can help enhance the supply of raw materials, which would help address the shortcomings in Tamil Nadu's tapioca business. Mitigating environmental problems can be achieved by supporting ecologically friendly techniques and encouraging sustainable agriculture methods. Incentives can also be offered to entice more farmers to grow tapioca, which will raise cultivation rates and provide a consistent flow of raw materials. In order to solve these issues and develop the tapioca sector in Tamil Nadu, cooperation between governmental organizations, financial institutions, and industry participants is also necessary.

## CONFLICT OF INTERESTS

None.

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