Market constraints and opportunities for cassava in Tamil Nadu, India

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Introduction

Cassava (*Manihot esculenta* Crantz), renowned as a highly productive tropical tuber crop, known to support rural communities for its tolerant production capacity, high caloric value and vast industrial application uses, supports over 10,000 smallholder farmers in the South Indian State of Tamil Nadu.

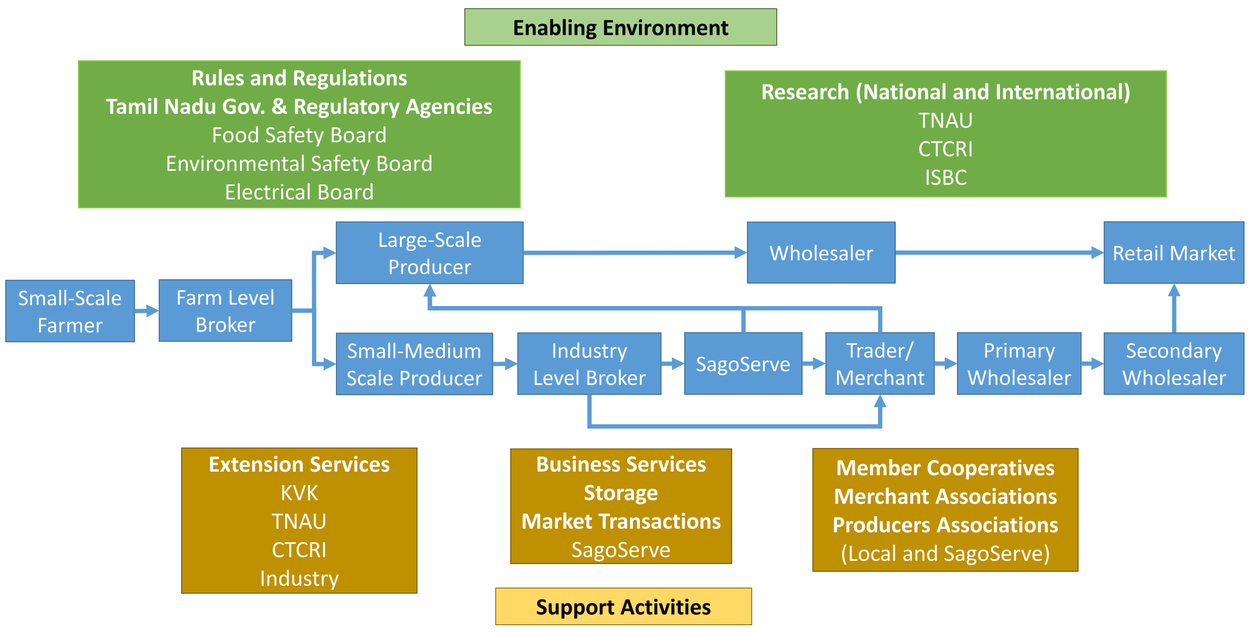
To support objectives for improving food security and rural development, this research has been conducted to assess the value chains associated with Tamil Nadu cassava production. The analysis has been used to better understand the relationship between the value chain actors and market system. The goal of the project was to determine the opportunities and constraints for the Tamil Nadu cassava market, centering around the Salem production hub, including the Districts of Erode, Dharmapuri, Namakkal, Viluppuram, and Salem.

Investigating the function of the cassava market system serves to better understand the relationship between the market and farm level production. This information aims to provide leverage points to determine where intervention may have the greatest impact to support market growth and community livelihood lying at the base of the value chain.

Methods

- Two field surveys in Tamil Nadu utilizing purposive sampling to conduct interviews and group discussions.
- Quantitative and qualitative data were collected from actors and key informants along the industrial cassava value chain.
- Key informants included: farmers, industrial producers, producer associations, brokers, traders, cooperative organizations, extension service providers, and government agency representatives.

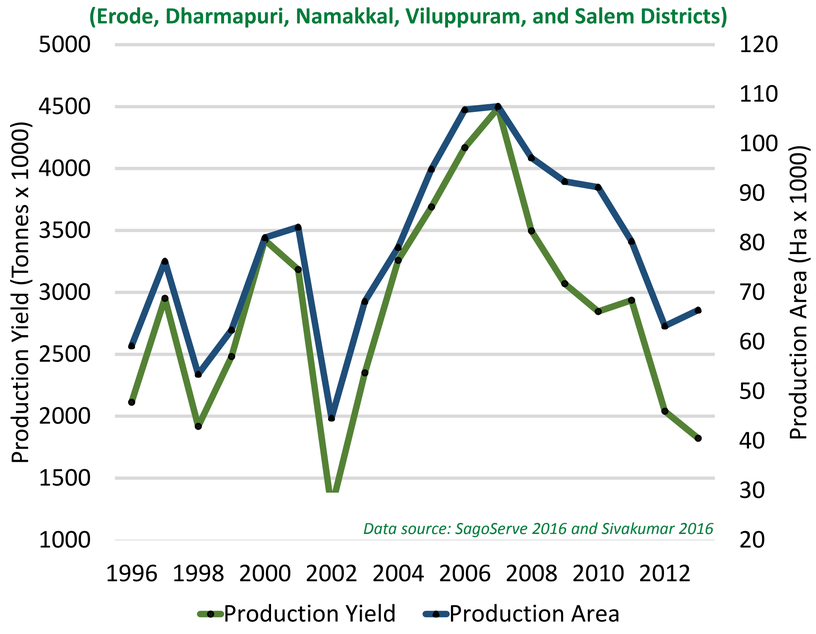
The Industrial Cassava Value Chain



Two primary products are produced on an industrial scale; starch and sago. Product value chains are not individually distinguished as actors in each value chain function in parallel, resulting from the unique trait that most processors have the capacity to produce both products; sago being a secondary product from the initial production of starch.

Cassava Production and Price

Annual cassava yield and production area 1996-2013
(Erode, Dharmapuri, Namakkal, Viluppuram, and Salem Districts)

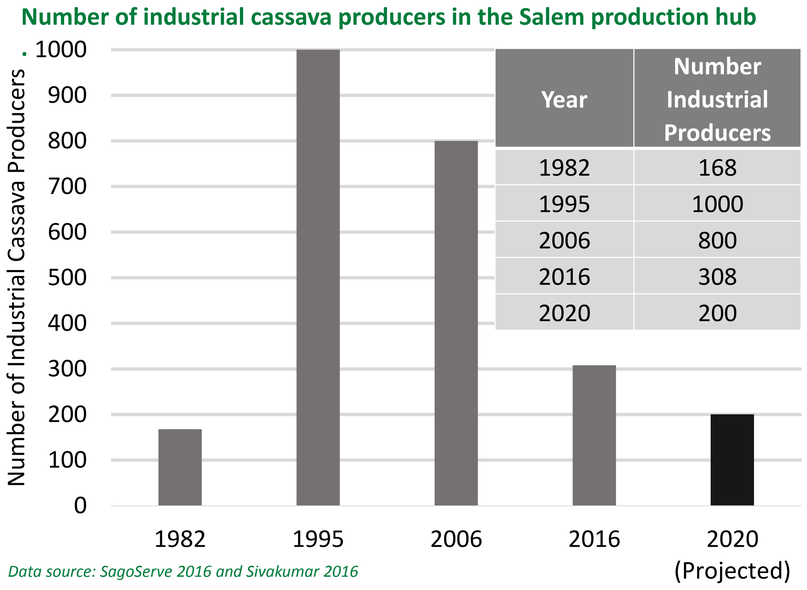


Data source: SagoServe 2016 and Sivakumar 2016

Virtually every actor interviewed affiliated with the industrial cassava value chain stated that the primary constraint for them as an actor and for the industrial cassava market as a whole are dramatic price fluctuations. Both farmers and industrial producers state that the extent of volatility creates a speculative market.

Market Composure Shift

Number of industrial cassava producers in the Salem production hub

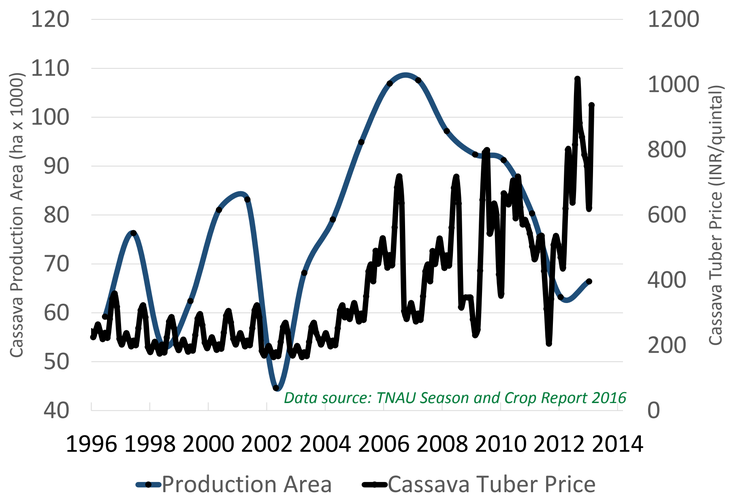


Year	Number Industrial Producers
1982	168
1995	1000
2006	800
2016	308
2020	200

Data source: SagoServe 2016 and Sivakumar 2016

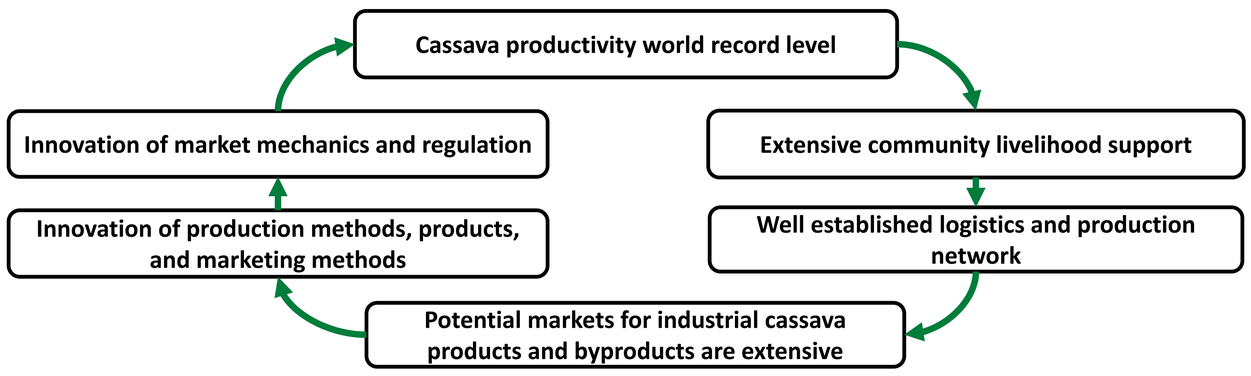
- Growth has occurred in a select portion of the industry.
- Starch demand has been significantly reduced due to substitution.
- Few industries have emerged as large-scale starch producers, capitalizing on economies of scale.
- Sago presents an opportunity to achieve greater value addition than starch, making it a more attractive for smaller processing units.
- Demand dynamics and industrial upscaling have clear impact on the number of processing units.

Cassava tuber price and annual cassava production area 1996–2013
(Erode, Dharmapuri, Namakkal, Viluppuram, and Salem Districts)



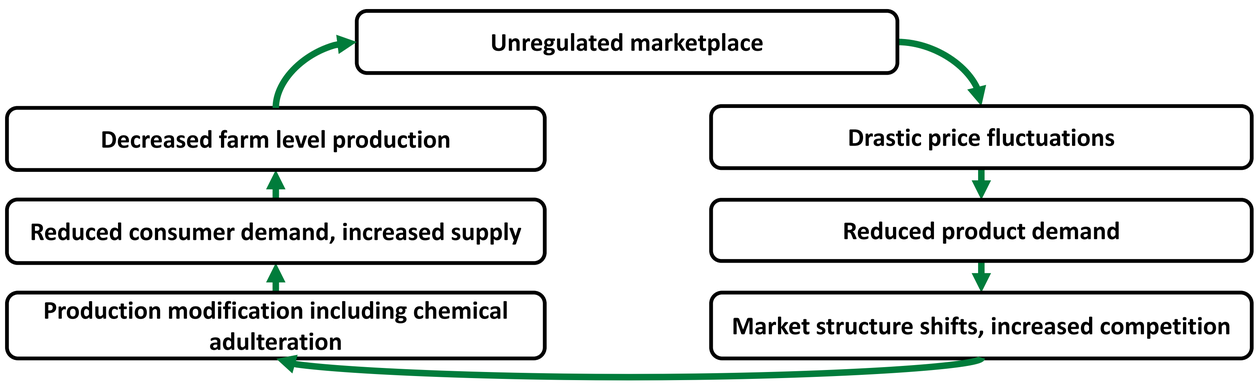
Data source: TNAU Season and Crop Report 2016

Opportunities



- Cassava production contributing to industrial markets supports an extensive portion of the rural community.
- Well developed production practices and tolerance of cassava serve to overcome water and soil constraints.
- Cassava as a base ingredient has the opportunity to support a vast array of markets with continual growth.
- Abundant opportunities exist for new product and marketing method innovations.

Constraints



- Continual industry transition is occurring amidst pressure in an unregulated and highly fluctuating marketplace.
- Price fluctuation results from supply/demand behavior, lack of regulation, and governance structures.
- Price instabilities have been detrimental to starch demand; reducing growth, causing a producer shift towards sago.
- This production shift has increased competition, reduced small-scale production units, and provoked adverse production strategies, including potentially irresponsible modernization and product adulteration.

Quality Regulatory Environment

Sago produced with chemicals (left) vs organically produced sago (right)

The Hindu 2012

Some industrial producers seek to increase profits through the use of chemicals during cassava processing. Practices include:

- Chemical whitening of starch and sago, aiming to improve product yield and increase whiteness parameter directly connected to market value.
- Chemical use to remove impurities such as sand and enzymes serving to increase starch recovery during processing.

Although the Food Safety Board prohibits these practices, producers have a clear divide on the use of chemicals. This divide inhibits collaboration along the value chain.

Conclusion and Recommendations

The results of this research illustrate a market characterized by significant constraints, which must be addressed prior to addressing supply side, production innovations when considering how to develop livelihood opportunities for the rural communities producing cassava. Market function and demand for cassava based products must be developed and structured in a way that farmers have a considerable desire to function in this marketplace.

Socioeconomic market knowledge is crucial to create a platform for further innovation such as the development of improved or CMD resistant varieties. Key recommendations resulting from this research include; establishing industrial production standards, further development of industrial quality and safety standards, and the introduction of improved marketing methods. Systems to reduce price fluctuations must be introduced, with further exploration of government market regulatory action. Essential to these recommendations is a collaborative effort towards innovation along the value chain, as growth needs to be pursued collectively to ensure inclusive sustainable market function. These solutions serve to benefit the continual production of an essential crop supporting the smallholder community of Tamil Nadu.

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