

Status Paper

Tomato Production and Value Chain Prospects in Sindh

A Case of Thatta, Sujawal and Badin
Districts, Sindh

Research conducted by



Research and Development Foundation (RDF)

July 2021



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1. Introduction

Tomato is one of the most important vegetables worldwide. As it is a relatively short duration crop, gives a high yield and it is economically attractive if marketed smartly. Tomato is rich in minerals, vitamins, essential amino acids, sugars and dietary fibers. Tomato contains vitamin B and C, iron and phosphorus¹. Tomato is consumed fresh in salads or cooked in sauces, soup and meat or fish dishes. They can be processed into purées, juices and ketchup.

Tomato is available throughout the year as it is grown in many parts of the country. In Sindh, it is cultivated over an area of around 27,000 ha with annual production of around 200,000 tons on an average. During the fiscal year 2019-20, tomato was cultivated on an area of 22,542 hectares and produced 164,658 tons.² During the current fiscal year, tomato crop cultivation is estimated to over 30,000 hectares.

In Sindh three districts namely, Badin, Thatta and Sujawal are known for better production of tomato. Although tomato is available throughout the year, but its peak availability in Thatta, Sujawal and Badin falls in the period January to March/April months.³ These are the months in which tomato is available in access in the market and is sold in very cheap rates. The climate of this area favors the cultivation of variety of major and minor fruit and vegetable crops including tomato.

Research and Development Foundation (RDF) conducted research on this important crop in lower riparian districts of Sindh. RDF is a non-governmental and not for profit organization working on sustainable livelihoods and climate change adaptation in Sindh, since the year 2002. The main objectives of this research are as follows:

- i. Explore tomato cultivation trend in Thatta, Sujawal and Badin districts and production challenges
- ii. Conduct an economic analysis of the tomato production and marketing
- iii. Identify the challenges in accessing markets and fair price
- iv. Document the farmers' perspective on tomato production in Sindh
- v. Identify opportunities for value addition opportunities in the target areas

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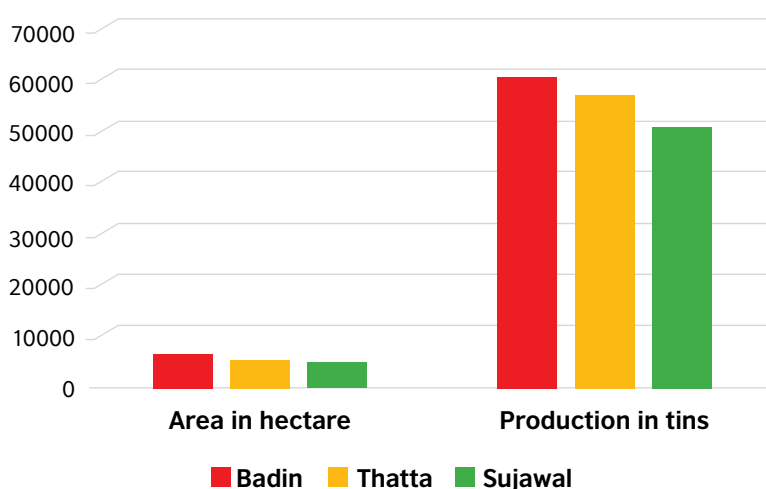
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2. Tomato cultivation trend in Thatta, Sujawal and Badin districts

For this purpose, three Union Councils Sukhpur (Mirpur Sakro, Thatta), Ladiyoon (Shahbander, Sujawal) and Shahwah (Matli, Badin) were selected for conducting field work.

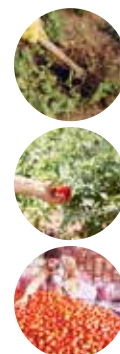
Estimation of tomato production in three selected districts



To assess the tomato cultivation trend in Thatta, Sujawal and Badin districts, a standard form was developed for focused group discussions with tomato growers, local tomato traders/marketers and line department officials.

The information collected through field work suggests that tomato is produced at approximately 1000 to 1500 acres of land in union council Sukhpur of Thatta district. In union council Ladiyoon of Sujawal district, tomato is cultivated at around 900 acres of land and in union council Shahwah of Badin district, the estimated tomato crop is cultivated at around 1100 acres of land. It is quoted in different researches that Asia's largest tomato market is situated in Badin from where each year, tons of quality tomatoes are supplied across Pakistan.⁴

The soil and environment of above three districts attracts the farmers/land owners to grow tomato on large scale so as to have instant cash benefits because the tomato production takes less time than other crops. During field work, it emerged that land is also contracted for six months to people from other provinces. This trend was reported mainly in district Thatta and Sujawal. During focused group discussions, tomato farmers revealed that many tomato growers take loans and advances from lenders of Karachi and other provinces on fixed terms and conditions.⁵ These conditions in many ways are disadvantageous for tomato growers. Because in this way the rates are already fixed by the money lenders who normally take tomato production in total and the growers do not have say in bargaining of rates.



3. Tomato crop cycle

Tomatoes can be sown twice a year: in July-August with harvest in November-December, and in January-February with harvest in March-April. But growers in these three districts normally avoid growing second time around as they don't expect good market rates due to extensive tomato crop cultivation in different parts of Pakistan and excessive product supply in all local markets. Besides, the environment does not allow them to cultivate tomato twice a year. The issue of water scarcity is biggest one in lower districts of Sindh province.

During field research, tomato growers complained lack of off-season seeds and no support from the government discourage them to cultivate tomato twice a year. Many of the tomato farmers were willing to grow tomato off-season if the government support them.

Tomatoes in Sindh have a higher consumption rate and are also known as luxury food, but the farmers most of the time suffer from profit volatility and seasonal variations in productivity. As far as marketing channels are concerned, many challenges during production and transportation of tomato crop are being faced by the farmers, particularly the small farmers, who grow tomatoes with the hope to get higher profit margins in market.

Owing to low revenues, farmers have started protesting and demanding for fair market price of their produce. There is need to research into this issue, to find out the key reasons and factors causing tomato price instability.

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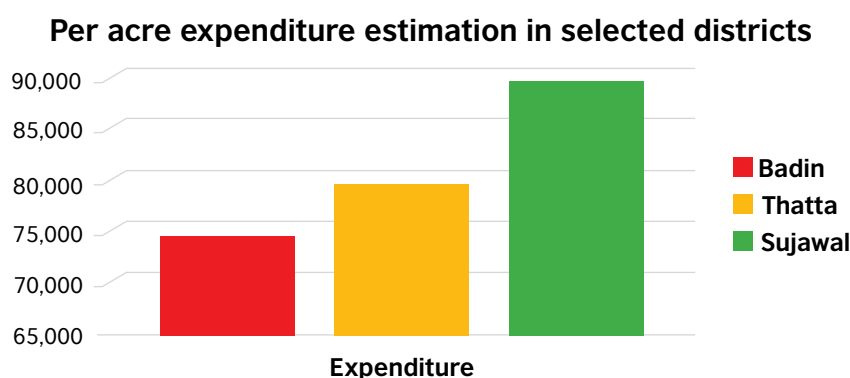


4. Per acre yield, income and expenditure analysis

As the tomato is a relatively short duration crop which gives high yield, depending on soil fertility, proper water, weather, temperature, and care. Due to its economic viability, growers always prioritise this crop and spare more lands for its cultivation.

To get maximum yield from this cash crop, farmers use extensive inputs for getting its good yield. This leads to relatively higher cost of production per acre. Tomato Production costs vary in different tomato production districts and for different tomato growers. Per acre production cost is reported by tomato growers in district Thatta was Rs. 80,000 to Rs. 90,000. In district Sujawal, it was reported from Rs. 80,000 to Rs. 110,000. However, in Badin district, the cost for one acre tomato production was lesser at around Rs. 60,000 to Rs. 80,000.

Tomato yield trend also varies from one district to another district. In district Thatta, the tomato yield per acre reported by different farmers was between 800 (32,000kg) to 1200 (48,000kg). In district Sujawal, tomato yield was around 800 (32,000kg) per acre. However, in district Badin, per acre yield of tomato was reported around 750 (30,000kg).



This shows that tomato growers should get at least Rs:5/1kg on ground at tomato production site to at least get the minimum profit from the yield. However, for better benefits the growers of tomato demanded that they should get at least Rs:10/1kg and if this yield reaches at consumer and cost him Rs:20/1kg, then it seems moderate and affordable to each category of consumer. But unfortunately, during peak season, tomato growers get less rates than Rs:5/1kg at production site. During field research and focused group discussions, tomato growers lamented that government officials don't bother to intervene in market rate management and this results in a big loss for tomato growers.

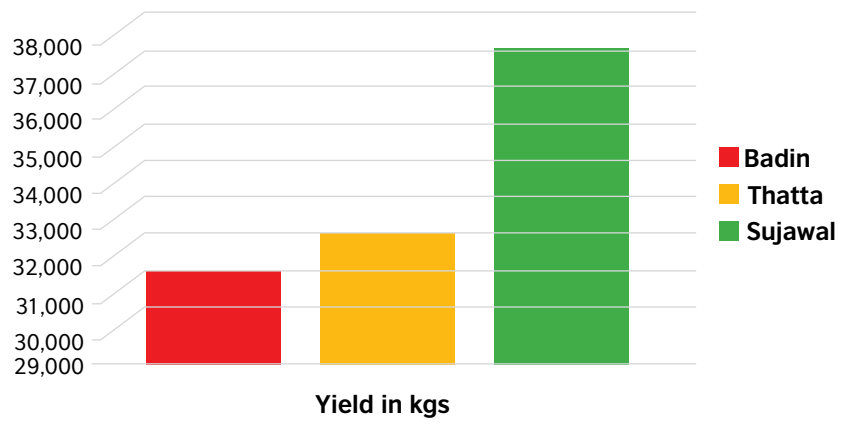
When asked from officials regarding above issues of tomato growers, they opined that this is a policy issue and could be solved by the government. They are not authorized to intervene in this matter.

Major production issues mentioned by farmers included high seed cost, poor seed quality, lack of research for disease and harsh climate resistant hybrid seed varieties,



incidence of severe pest attack due to low quality pesticides, lack of proper training regarding production technologies resulting in high cost of production and labor shortage particularly at the harvesting time.

Per acre yield estimation in selected districts



5. Primary purchasing markets and direct selling by farmers

Tomato producers normally look for better selling points for their yield. But in many cases the small farmers are not able to sell tomato production in big markets directly.⁶ During peak season, lenders and profiteers establish their purchasing points in high tomato production areas and small farmers sell their yield to these lenders who then further transport tomato production to big markets like Karachi, Lahore or Peshawar. During the field work, farmers complained that local markets at town or tehsil level do not have capacity to purchase or store such gigantic production of tomato so they are compelled to sell their produce to the lenders because tomato when ripened becomes very sensitive and it gets spoiled if not stored properly.

This year in 2020-2021, the Sindh province had a bumper crop of tomato. Due to the ongoing import of tomato and some unforeseen market factors and weak/absent price control systems, the rates of this perishable commodity in the local market gets dropped drastically due to which farmers are not receiving proper revenue for their produce. Overall tomato production appears to be a profitable business. The major issue hampering the profitability of tomato production was the extreme price volatility during different times of the year and its cyclical trend.

Picking is usually carried out by the female while sorting, packaging, transportation and marketing is done by males. Marketing is done at local assembly markets, distant wholesale and regional markets. Packaging and transport usually depend on the distance of market where it has to be transported. For local level selling, shopping bags are used while for distant markets, wooden and plastic crates are used as packing material. Tomato is mostly transported on trucks and pickups for wholesale and regional markets while rickshaws are mostly used for transportation of tomato produce to local assembly markets.

Major marketing problems of tomato producers according to survey respondents were high price fluctuations, traditional post-harvest handling, low shelf life, limited cold storage and refrigerated transportation, higher post-harvest losses in terms of quantity and quality, lack of organized price information system, lack of training facilities for marketing and less value addition opportunities.

Poor farm to market infrastructure, inefficient factor and product markets, volatile prices, consecutive shortages and hoarding, inefficient storage capacity, poor implementation of grades and standards are identified as some of the prominent challenges, which need to be tackled. Implementation of rules and regulation is weak or even non-existent as most of farmers and other stakeholders are working in isolation without any formal registration.

Tomato consumers say, they are forced to pay high prices due to supply imbalances, while farmers suffer when imports are allowed for so called stabilizing the market prices. It is feared that tomato prices crisis would be permanent feature of Sindh's agriculture economy.



6. Price controls at farms and markets

Since the government controls and announces the rates and prices of many consumer and non-consumer commodities, like rice, wheat, other grains, cotton etc, it never intervenes in managing the pricing of tomato production. The Assistant Commissioners at sub-district level only monitor the price check-list for consumers which has nothing to do with those who produce/cultivate tomato in the farms.

Farmers, who have observed ups and downs in terms of crop productivity, impacts of weather change, and shattering prices, shared that this year's loss has compelled them to sell tomato at very low rates in the local market. **"Prices are so down that growers are unable to get the cost of production back. Thus, they were removing tomato crop from fields and some growers destroyed their crop,"** said Mehmood Nawaz Shah, senior vice president Sindh Abadgar Board. **"We wrote a letter to the Ministry of National Food Security to stop the import of tomatoes, but to no avail. The import stopped only after local tomato prices nosedived."**

One of the tomato growers said the vegetables that could be exported were being imported, which was a two-side attack on farmers. **"If there is a support for floor price, you can control it through import or export, but the problem is there is none,"** he said. This is evident from that Muhammad Ismail Rahu, Sindh Minister for Agriculture, had also written a letter to the federal government few days back demanding a ban on import of tomato.

Haji Shah Jehan, a trader at Karachi Wholesale Vegetable Market, said that tomato prices vary in the market, adding, sometimes they reach up to Rs400/kg, and at others they bottom. **"When tomato prices reach the highest level, only 10 percent growers get the benefit, as 90 percent growers, usually small farmers, do not grow the crop that season,"** Shah Jehan said. **"When farmers run losses in one season, they do not grow tomato during the other with the exception of some big growers, while demand in the local market is met through imports."**

Muhammad Bux Lashari, farmer from Thatta said that lowest prices were a blessing for the tomato ketchup making companies, who enjoy buying at lower rates and store it. These companies are not at local places and get low-rate tomato yield through middle-man and get more benefits.

Bola Khan said there was no government support to the growers, who were compelled to borrow from the middlemen in the market. **"Provincial and federal governments should formulate their policy. They should stop substandard seeds and pesticides,"** he said.

Mushtaque Ali Khwaja of Badin district said that tomato farmers in such situations themselves start wasting their harvest-ready crops worth millions. **"Though it's not unusual, it was government's policy failure that led to this situation. While local onion and tomato were being harvested, traders were still importing them from**



overseas; however, tomato imports came to a halt after its local prices hit a rock bottom.” Shah said tomato was being sold at around Rs5 to Rs7/kg with delivery in Karachi Wholesale Vegetable and Fruits market.

“There is a support mechanism in our neighboring country, India. The government there provides seeds, fertilizers, and even water to farmers, who are free to sell their produce anywhere and the state also buys from them,” he said. “That’s why they don’t need our potatoes or tomatoes despite the growing needs of their huge population”, he added.

Delayed winter has had a negative impact on major crops and vegetables, especially the sensitive tomato, which either perished in the fields or was losing its strength, as temperatures were unsuitable for ripening.

Gulab Shah, a grower from Keti Bunder, Thatta district, said that tomato needs proper coolness for timely ripening to fetch a good market price. Delayed winter has slowed down the ripening process and hence the traders are reluctant to take tomato from fields to the markets.

Noor Muhammad Thahemore, from Sujawal district, said local tomato producers have yet not guessed the unbelievable drop of price in the local market. But the ripe tomatoes were lying abandoned in large fields, instead of being supplied to the market.

Mir Zubair Talpur, a leading landlord and the chief of Sindh Growers Alliance, said, “**It is climate change, which has impacted all the seasonal crops in the province. It is not only tomato, almost all vegetables and crops in Sindh are facing similar situation because of weather change.**” For instance, he said the major winter crop, wheat, which was sown earlier, would also have low yield since the required cool temperature was not available.

Similarly, the grain crop sown later would face water shortage because the annual rotation period was starting shortly, which might affect its productivity. During the rotation period, entire watercourses are stopped and no crop receives the exact needed water. About Punjab, Talpur said that it was a major market for tomatoes from Sindh. However, presently, the Punjab market imported tomatoes as well as some other vegetables from India. “**This is why the price of tomato has dropped in the local market,**” Talpur said, and added that the price of Indian tomato was reasonable compared to the local product.

“**Growers in Sindh and other parts of the country do not receive benefit of subsidy on agriculture from the government. Compared to this, Indian growers are benefited and sell their products cheaply.**” He also said the crop was infected by a virus in some areas, but the concerned authorities were yet to understand the situation and help growers to avert losses.



7. Tomato Preservation and Packaging opportunities

Establishing the Tomato Industrial Zones in tomato producing districts is the sole answer to avoid the market fluctuation of tomato. However, there are other ways of preserving the tomato production which can be done with very low cost at local level.⁷ As tomato production has increased in recent years due to the economic opportunity and nutritional importance of the crop. However, due to low rates and marketing issues, the growers have been in loss mainly due to postharvest issues. Tomato producers have therefore got good harvests in recent times, though the good harvests have not earned much for the growers. So, it is important to search ways so that the postharvest quality and shelf life of the tomato can be preserved.

There are many ways where handling practices like harvesting, precooling, cleaning and disinfecting, sorting and grading, packaging, storing, and transportation played an important role in maintaining quality and extending shelf life. Though the quality of any fruit after harvest cannot be improved by the use of any postharvest handling practices or treatment methods, it can however be maintained.⁸ Shelf life of the fruit can also be extended when appropriate postharvest handling practices and treatment methods are employed.

It is significant that a National Tomato Research and Development Center must be established to lobby for favorable policies for the tomato sector and sponsor research on all value chain issues of tomato including harvest and post-harvest management and processing. The provincial research systems will establish tomato research stations in each tomato producing districts/areas to help the tomato growers at local level. There are many techniques and methods for preserving the tomato production so as to benefit the growers and consumers equally.

During focused group discussions, tomato farmers looked very enthusiastic about having such opportunities where they could preserve their yield in case the tomato market crashed. However, tomato farmers were unable to convert such idea into an action. “We are willing and asking the government to provide us such training, equipment and facility to preserve our tomato yield but all in vain”, said Abdul Rahim Nizamani of Badin.

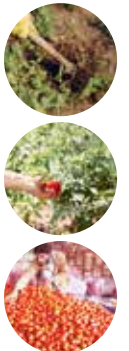


8. Industrial prospects in local areas.

There is need to start a comprehensive program to uplift the tomato sector which has the ability to earn significant foreign exchange by fresh and processed export. Tomato paste is in great demand locally and also for export purposes. In many parts of the world, it is a major cash and industrial crop, however in Pakistan, particularly in the areas where it is grown, the industrial potential has yet to be capitalized on. There are only two tomato paste units in Sindh with total capacity of 13 tons/hr.⁹ In view of high demand for tomato paste and adequate availability of tomato, there is great scope for utilization of this potential for manufacture of tomato paste in the project facilities.

Following initiatives should be taken to promote tomato processing in the country.

- Promoting 'contract farming' between exporters/industrialists and farmers with obligations to supply special quality and quantity of tomato at destined period with agreed price in the contract.
- It is important to introduce special baskets for harvesting tomato followed by introducing special packaging for tomato production at urgent basis.
- Establishment of puree extraction units as small cottage industries at local level especially in major tomato production districts, and tomato powder manufacturing at district level.
- Promote quality puree manufacturing and packaging through Farmers' Entrepreneur Groups.
- Training and certification in food safety and quality management systems at tomato manufacturing sites. This will definitely improve value chain of tomato.
- Training of farmers, and logistic and storage people to maintain the quality of tomato through contractors and Farmers' Entrepreneur Groups.
- Incentivizing the establishment of tomato pack houses in the tomato growing villages through FEGs, with the facilities like grading, packaging, cold storage, etc.



9. Conclusion

Sindh needs dynamic, integrated and pro-active policy framework to rehabilitate the agricultural marketing system. There is strong need for commitment by the government, private sector and the relevant stakeholders in the marketing system to adhere to the policy agendas of reforms, initiated by the government, for the welfare and betterment of farming community and consumers as well as the market players (GOP, 2009). The recent food crisis and occasional surpluses and shortages of agricultural commodities underline the need for taking measures by the government to improve the working of agricultural marketing system.

Besides, the issues of daily wage farm workers remain under carpet though they strive day and night right from cultivation to harvest of tomato crop. Majority of these workers are rural women who are highly unpaid workers. Small and big landlords of tomato crop cry that they don't get fair prices of their yield in the market. They, resultantly pay very low to the workers who are helpless in all this scenario. Government talks about policies regarding betterment of tomato growers' issues but less is considered on the issues of daily wages farm workers.

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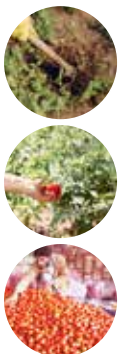
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10. Recommendations

Bearing in mind that the research is at an early stage, some issues that require rigorous analysis to formulate effective policy recommendations for improving the productivity and marketing of tomato appear to be:

- Government should announce and implement the 'Purchasing Price' for tomato production like it does every year in case of wheat and rice etc.
- The government should ban the tomato import from other countries or at least costs and benefits of a policy of imposing restrictions on tomato imports particularly in peak tomato production season to minimize the seasonal price fluctuations.
- The government should take measures to ensure fertilizer and pesticides meet specified quality standards and implement the policy measures ensuring quality of imported hybrid seed through strict quarantine and quality check measures. For this purpose, laboratories at Tehsil level must be established for tomato growers to improve local hybrid seed production system. Such as introducing heat tolerant seeds to avoid the yield fluctuations due to severe climatic conditions.
- Policies to enhance value addition in the tomato industry, including training programs for farmers through effective extension services, including training of farmers' families/women.
- Investigate the regulatory systems for market intermediaries, particularly commission agents, to assess the feasibility of reducing the commission charged in Wholesale Markets which normally ranges between 15 and 30 percent depending upon the amount of loan/credit taken by producers from commission agents.
- The structure of subsidies and incentives for tomato growers should be reorganized. Import duties on clearly defined post-harvest tools and equipment, like farm-level cold storage, refers truck, pack house equipment should be eliminated for certain period.
- Establishment of Farmers Entrepreneur Groups (FEGs) at the Union Council level is needed. The government will guide the FEGs and monitor its functioning through a paid business manager. The FEGs will have initial endowment fund and generate its own funds through membership fee to sponsor various tomato related Research & Development (R&D) activities.
- The FEG will identify the tomato R&D issues and seek grants from government or fund research from its own resources. Promote specialized extension to solve special tomato problems on need and paid basis from FEGs funds.
- It is proposed that Processors/Traders Associations shall be established as a platform for promoting tomato trade with overseas and domestic level. Through increased collaboration between processors, larger orders will be achieved through one portal. Marketing and promotion costs will be shared across the association and tomato will be marketed with brand name.
- Agriculture department should work to have more facilitation for tomato growers by establishing a separate desk for tomato growers. This includes contacting and visiting overseas processors and learning new technologies for production, post-harvest handling, and processing. Cost sharing basis participation in international food festivals, International Horticulture conferences, and demonstration of tomato and its produce in these conferences, etc.



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