

Local Food Systems and Farmers' Markets: Concepts, Models, and Issues

Abstract

The local food systems and farmers' markets support the local economy, build relationships between producers and consumers, and promote social interaction along with the provision of fresh and nutritious foods. The local food systems cater to the three dimensions of sustainability viz. environment, economy, and society by providing access to fresh produce. Various models of local food systems are in operation, direct-to-consumer, direct-to-retail, farmers markets, and farm-to-school programs each with distinct features of operation.

Consumers prefer local food markets as they perceive the locally grown food to be fresher and they like unique and special foods on offer at these markets. Policy support and capacity building of small-holder farmers on reducing the cost of cultivation, marketing skills, and knowledge of food safety regulations are essential.

Farmers' markets are integral to local food systems and various models of farmers' markets are operational in different countries of the world. The mode of functioning and operational principles of a farmers market (Rythu Bazar) in the Telangana State of India has been described. The participating small-holder farmers benefitted from higher price realization, an increase in earnings, and immediate cash receivables. However, the major constrained constraint was of inadequate storage facilities for left-over produce. The disruptions to food supply chains faced during the recent covid-19 pandemic have indicated that the farmers' markets were preferred by both poor and elite customers alike and thus the local food systems can provide resilience to the food systems. The SWOT analysis of the farmers' markets indicates a robust system with explicit strengths, and operational weaknesses, the opportunities are also many-much folded with the suitable policy and affirmative action the threats can be addressed.

Key Words: local food systems, sustainability, local economy, producer-consumer interaction, farmers' markets

Introduction

The food that is produced and consumed within a short distance with a distinct social structure of small farmers and a short supply chain is considered as local and there is no stringent condition of a particular distance to label the food as 'local'. The primary aim of the local food movement is to create a connection between the food producers and consumers, to

develop more self-reliant and resilient food networks; to improve local economies; or to affect the health and environment of a particular community.

A local food market provides a direct marketing outlet for local farmers and food processors and maybe in open-air markets put up on a seasonal and weekly or bi-weekly basis (Jacobson, 2006). The definition of local food systems does not always refer to the geographic location of production to consumption but is best defined as local, based on the sale of produce by farmers directly to consumers at local farmers' markets, schools, hospitals, and institutions (Martinez et al., 2010). Local food systems can be considered as economically viable, ecologically sound, and socially just alternatives to the conventional food systems (Allen et al., 2003). Local food markets are much more than the sale and demand for local food. They are a blend of supporting local economies, social interaction, relationships between producers and consumers, and nutrition and health (Galt et al., 2019).

The interest in the local food system is propelled from by the desire to eat food that is fresh fresh food, has a short supply chain, and obviates the need for storage and travel over a long distance before reaching the consumers' plate. In the local food system the distance between producer and consumer is minimized (Peters et al., 2008).

The Local food system may be classified primarily as a farmer-to-to-customer and farmer-to-retail-to-retail. Local food markets are characterized by small farmers who do their own cultivation, packaging, marketing, and sale of a variety of products with relatively smaller supply chains. Based on the stage of the supply chain the consumer gets to know of the origin of the product and thus builds a bonding with the producer (Marsden et al., 2000).

Local or traditional food markets are a primary source of food distribution and purchase in many of the Low and Low Middle-Middle-Income Countries (GloPan, 2016). Enabling smallholder farmers' inclusive participation in local food-sector growth has significant potential to overcome the challenges, reduce poverty and improve livelihoods. The products sold in local food systems are generally fresh produce (vegetables, eggs, dairy, and meat) and rarely cereals. The local food system caters to the three dimensions of sustainability, viz. environment, economy, and society by facilitating access to fresh produce grown by local farmers aiding in the development of the local economy and traceability of produce.

Local food systems offer the benefits of supporting the local economy and also reduce reducing the climate change impact. There is an added advantage of fresh produce with longer shelf life and lower transportation costs. Vegetables mostly are heavy due to water and sourcing them locally helps to reduce carbon footprint. The Centre for Sustainable Systems at

the University of Michigan has made an estimate on the contribution of different components of food systems to the carbon footprint: food production is responsible for 68% of the emissions followed by food for 10-30% and transportation of the food for 5.4% reported by Robertson (2022).

Alam and Khatun (2021) reported that cash support along with the availability of seeds and inputs to vegetable farmers is essential to ensure a steady supply of fresh produce for ~~the~~ consumers even in ~~the~~ times of disruptions. Reforms in marketing are needed for farmers to explore the sale of produce through avenues other than the agricultural produce mandis (Kanitkar, 2017). Mahaptra (2018) opines that around 30,000 agri-markets are needed to give a fair deal to the small and marginal farmers who account for 85 per-cent of the total landholdings and hold about 40 per-cent of the total marketable surplus of perishables that can benefit both the consumer and producer.

The benefits of local markets to small farmers are twofold, fair prices with immediate cash payments, and small quantities can also be sold (Kallummal & Srinivasan, 2007). Moreover, the results of a survey in the capital city of India (Delhi/ NCR) revealed that the majority of the people preferred to buy farm fresh vegetables as a matter of choice over ~~the~~ stored produce from supermarkets (Dwivedi, 2022)

Types of local food markets as defined by the Economic Research Service (USDA, 2008)

Direct-to-consumer marketing: the agricultural products are sold directly to consumers either through farmers' markets, road-side stands, or maybe a ~~community-community-~~supported agriculture venture.

Direct-to-retail/food service marketing: the producers sell directly to buyers in the food business such as restaurants, supermarkets, or institutions, like schools, hostels, and hospitals.

Farmers' market: is a marketing outlet which may be at a make-shift or permanent location where farmers sell local food products to individual customers on a fixed day of the week the highlight being the sale of seasonal produce all year through.

~~Community-Community-~~supported agriculture (CSA): is a kind of marketing arrangement in which members purchase shares of a farmer's expected yield before planting. As per the arrangement agreed upon, the members' share is delivered by the farmers or it is picked up by the members themselves.

Farm ~~to~~ to-school programs:- are collaborative projects that connect schools and local farms to serve locally grown, healthy foods to improve student nutrition, educate students about food and health, and support local and regional farmers.

Benefits of Buying Local

Economic

- Buying locally produced food helps especially ~~the~~ small-holder farmers and provides sustainable livelihoods to the local community (Gale, 1997).
- Moreover, the farmers who sell in local markets can save on the additional ~~value~~ value-added costs of safe storage, ~~and~~ costs incurred on ~~the~~ transport of produce to markets, in a way the middlemen who corner some share from the sale of ~~produce~~ products are also done away with.
- Buying food locally results in more many to remain with the local farmers and provides more employment to ~~the~~ local population
- The sourcing and endorsement of local foods by restaurants, celebrities, and hospitals adds value and creates ~~a~~ market for local foods
- Buying local food also ensures food and nutritional security in times of civic unrest, pandemic, and other similar disruptions to the agricultural sector in a country.

Environmental

- Eating food that is cultivated locally helps to preserve the ~~small-small~~ small-scale farms
- It cuts down the distance that food travels i.e. food miles and also reduces ~~the~~ fossil fuel consumption, ~~the~~ air pollution, and amount of green-house gas emissions
- The local genetic diversity of cultivars can be preserved by sourcing local foods
- It is more likely that ~~small-small~~ small-scale farmers use more environmentally safe production practices

Consumers' preferences for local food

- The following reasons have been attributed by consumers² for preferring locally grown products
- The quality of locally grown food is better
- Locally grown products are fresher.
- Many customer-s develop ~~a~~ liking and taste ~~of~~ for products on offer in local food markets.
- Customers look for unique and special foods in local food markets

Capacity building of small-holder farmers for promoting local food movement

- Comprehensive training on cultivation practices to reduce cost and ~~maximise~~ maximize yields

- Creation of small scale distribution network for the supply of local food to main markets
- Enhancing the marketing skills of farmers
- Value addition and creation of niche products to attract consumers
- Educating the farmers about food safety regulations

Constraints /barriers

The main constraints faced by farmers² in local food markets is the low footfall of consumers as most of them are habituated to do their food purchases from supermarkets offering a range of products for the family's needs.

Policy support/initiatives to strengthen local foods

- Creating food links with public institutions(schools-,_hostels, hospitals, and prisons) serves the dual purposes of nutrition education and supporting the local economy
- ensuring that the farmers² use more of organic nutrients and lower the use of chemical fertilizers_s and pesticides_s would enable them to sell niche organic products
- Policy support is essential for incentivising-incentivizing the use of organic manures, cutbacks on fertilizer and pesticide use in locally produced food
- Collective action for the production and Sale of local produce by vulnerable communities needs capacity building and financial support
- Awareness programs need to be designed to create consumer demand for local foods that offer a fair price to producers and support the local economy
- Best practices of community-supported agriculture can help to design similar successful projects

Farmers' Markets are integral to local food systems

The farmers' markets help to link consumers to local producers and hence can sustain the local food systems. These markets are an essential component of cities and rural areas contributing to the local economy, food systems, and community feeling (Alonzo, 2017). Several countries have their own-models of farmers' markets. As a fairly successful case, the model of farmers' markets in India has been described.

Models of Farmers' Markets in India

Farmers' markets operate in many states of India (Punjab, Haryana, Rajasthan, Madhya Pradesh, Tamil Nadu, Karnataka, and Odisha). The most characteristic feature of these markets is the absence of middlemen and other marketing costs where the sellers

themselves do the loading and unloading of vegetables themselves and directly sell the vegetables to the consumers

Farmers' Markets (Rythu ~~bazar~~Bazar) being operated by the government of Telangana State, India

Farmers' markets known as Rythu Bazar (RB) were established in the year 1999 in the erstwhile combined states of Telangana and Andhra Pradesh, India. RBs are a successful model of direct marketing of fresh vegetables and fruits ~~on a daily basis~~daily to urban consumers mostly by the small and marginal farmers located close to cities. The seller farmers in the RBs are provided with water, raised platforms, and basic sanitation facilities by the marketing department free of any charge (Srinivasa et al., 2014).

Objectives of Rythu Bazar

The RBs were set up with the following broad objectives.

- To ensure remunerative prices to the farmers and provide fresh vegetables to consumers at reasonable rates fixed every day.
- Facilitate prompt realization of sale proceeds to farmers without any deductions.
- Curb malpractices in weighments and provide vegetables with correct weighments to consumers.
- Provide a direct interface between farmers and consumers by eliminating intermediaries in trade.

Telangana state at present as on November 3, 2022, has 47 Rythu bazaars functioning in different districts and the ~~district~~district-wise break up is as follows :Hyderabad (3),Adilabad (1),Badradri (Kothagudem) (2),Karimnagar (3),Khammam (5),Mah bubnagar(2),Mancherial (1),Medak (1),Nagarkurnool (1),Nalgonda (3),Narayanpet (1),Nizamabad (2),Medchal (Malkajgiri) (6)Rajanna (Sircilla) (1),Rangareddy (4),Sanga Reddy (2), Siddipet (1),Suryapet (2),Vikarabad (2),Warangal (3)andYadadri Bhongir(1) (tsmarketing.in).

The information on daily, monthly, district wise, rythu bazaar wise arrival of commodities, the maximum and minimum price of commodities, income entry, and expenditure entry is hosted on the site of Telangana rythu bazar information system maintained by the agricultural marketing department of the state of Telangana. Information on number of days of functioning of rythu bazaar is also the available comparative statement

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of vegetable arrivals and prices are also available for a period ranging from 2008 to the current year 2022(www.tsmarketing.in)

An analysis of the RBs indicated that most of the farmers were marginal and small (2 to 4 acres of land) and were very happy to sell in the Rythu Bazar (RBs) rather than in the wholesale markets-. Moreover, the participating farmers had benefited from the RBs and the profits were mostly utilized to create assets for the family. The farmers² utilized credit from institutional sources ~~on by virtue of~~ being members of savings and credit societies. On-farm improvements were carried out by digging wells and crop diversification was undertaken to augment income. The savings were invested in children's education and most of the farmers' reported being free of debts. (Srinivasa et al., 2014).

Rythu Bazar ~~were-was~~ rated by farmers as being beneficial in terms of higher price realization, increase in earnings, immediate cash receivables, and location advantage. However, ~~the~~ inadequacy of storage facilities was the constraint faced by farmers as reported by Dey (2012).

Lack of space for sorting and grading, improper price fixation, wastage of produce due to inadequate cold storage facilities, ~~and~~ poor sanitation facilities were the major constraints faced by farmers-. Farmers suggested improvements in ~~the~~ sanitation facilities, proper stalls for ~~the~~ sale of produce, covered spaces, and road facilities for ~~the~~ transport of produce(Varghese, 2021). Perfect co-integration of market prices among the rythu bazars in Telangana state has been reported by Mukherjee et al. (2014). Lack of involvement of farmers in price fixation, poor sanitation and storage facilities, ~~and~~ improper allocation of selling space were some of the constraints faced by farmers using the Rythu Bazar scheme as reported by Chandak and Leua (2014).

The following suggestions have been delineated by Srinivasa et al. (2014) to improve the functioning of RBs.

- Creation of a network of RBs to encourage aggregation of more farmers in the physical vicinity to avoid ~~long-long~~-distance travel
- Exclusive and subsidized transport arrangements for farmers bringing their produce to RBs
- Provision of ~~dust-dust~~-free, clean, and covered space to the identified RB seller farmers for ~~the~~ sale of produce in ~~an~~ ambient environment and ~~a for~~-comfortable shopping experience for consumers

- Adequate water and electricity connection for maintaining hygienic conditions in the sale points

Farmers' markets can ~~erisis-crisis~~-proof the food systems

Farmers' markets play a key role in the resilience of food systems by connecting consumers to producers during disruptions to other supply chains. Disruptions due to climatic, economic, environmental, and political ~~erisiscrises~~, war, and more recently ~~due to the~~ pandemic create a lack of access to food and an enormous hike in food prices. The local food systems can thus serve as a means to increase the resilience of the food systems. The closer the farms are to forks lesser the disruptions during times of crisis (Colicchio & Kessler, 2020). They can play an important role in the economic and social recovery post disruptions by managing the downstream supply chain as seen after the corona-virus pandemic (Tewodaj, 2020). The risk and spread of infections ~~is-are~~ high at the ~~post-post~~-production and transitional supply chains as these are centered on densely populated urban and peri-urban areas. Farmers' markets were frequented by both affluent urban customers and ~~food-food~~-insecure people during the pandemic.

During disruptions like the pandemic, ~~open-open~~-air, outdoor shopping in farmers' markets is healthier than in ~~the~~-grocery stores. The shortened supply chains also ensure food is handled by fewer people. Generally, ~~nutrient-nutrient~~-dense foods and freshly harvested produce ~~is-are~~ on sale in the farmers' markets which are very important for building immunity, especially during the pandemic.

The farmers' markets adapted well to the challenges imposed by COVID-19 by providing virtual sales through online platforms for connecting ~~the~~-local food producers to consumers (ENRD, 2020). The short supply chains may be the most viable option during extreme events like the pandemic, meet the sustainability goals (CoR, 2021), and build the resilience of local food systems (EC, 2020; Ledsema & Morales, 2021). However, the overdependence on local food systems may lead to a food shortage (Glauber et al., 2020). The farmers' markets in the USA registered a 40% increase in purchases during the pandemic through the use of the Supplemental Nutrition Assistance Program and Pandemic Electronic Benefits Transfer cards (Ledsema & Morales, 2021).

SWOT analysis of local food systems and farmers' markets

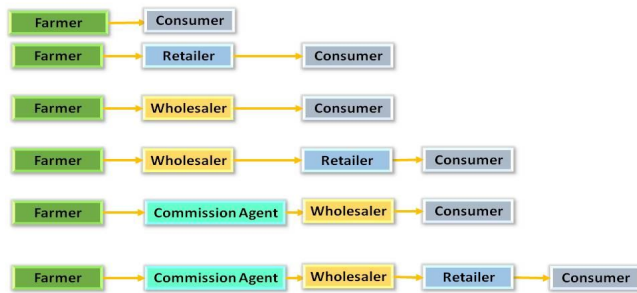
An analysis of the strengths, weaknesses, ~~opportunity~~opportunities, and threats (SWOT) of the farmers' markets has been presented in Table 1. Besides the aspects listed in SWOT, the adaptation of local food systems to climate, political and other disruptions ~~is-are~~ very high. The supply chains and intermediaries have been depicted in figure 1 and it can be

observed that the local farmers' markets depicted as the first model in the figure are devoid of intermediaries and the farmers and consumers have a direct connection and interaction.

Table 1. SWOT analysis of local food systems and farmers' markets

<p>Strengths</p> <ul style="list-style-type: none"> Farm fresh produce Elimination of middlemen Immediate cash transaction Prevents distress selling Lower rates tofor consumers Shortened supply chains Rent free selling space Small quantities can also be traded 	<p>Weakness</p> <ul style="list-style-type: none"> Price lower than wholesale markets Fear of unsold produce No storage facility for unsold produce No shelter from adverse climatic conditions Transport problems
<p>Opportunity</p> <ul style="list-style-type: none"> High consumer preference for fresh local produce Low carbon foot-print Sale of valuevalue-added products Revival of traditional foods/recipes Family outing to introduce food production systems to children Develop marketing skills Soft skills for customer loyalty 	<p>Threats</p> <ul style="list-style-type: none"> Competition from online platforms Low volume of sales Low sales during the holiday season Consumers' preference for fancy packaging Low prices during a glut Competition from super as consumers prefer oneone-stop shops Traders impersonate asfarmers Overdependence on local markets may lead to food shortages

Figure 1. Marketing models and Intermediaries



Conclusion

The three dimensions of sustainability *viz.*, environment, economy, and society are very well catered to by the local food systems and farmers' markets. The local food systems and markets are not bound by a rigid definition of the production and consumption of food within the same geographic location. The desire of consumers² to eat fresh food from a short supply chain has provided the impetus to the local food systems and farmers' markets. Small-holder farmers² benefit from the local markets and it also helps in supporting the local economy. The farmers' markets are integral to local food systems and different models of farmers' markets exist in different countries. The Rhythu bazaar model of the farmers market of the Telangana state of India was described as a case of the rural-rural-urban connection of consumers with the producers. The potential of farmers' markets to crisis-proof the food systems was established during the COVID-19 pandemic. Appropriate policy support to the farmers' markets will help in sustainable livelihoods for small-holder farmers.

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