Mapping Domestic Grape Value Chains in Maharashtra, India

The Connector Roles and Price Buffering Effects of Informal Local Buyers

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Authors
Abhay Gaikwad[1], Ted Schrader[2] November 2024

[1] State of Maharashtra's Agri-business & Rural Transformation Project; SMART, [2] Wageningen University and Research, Wageningen Centre for Development Innovation, The Netherlands

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Design
Erika Endrődiné Benkő

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This article looks at the roles, relations, costs and revenues of formal and informal midstream actors in domestic grape value chains in Maharshtra, India. It comes out that informal buyers, locally known as 'Vyapari' play very important roles in these value chains. They maintain close relations with grape farmers with whom they establish informal supply agreements when grapes are nearing maturity. By engaging seasonal labourers, the Vyapari collect, sort, grade and load the grapes at the farm. In addition to selling grapes to local retailers, Vyapari take orders from urban commission agents and wholesalers. By matching supply and demand, and by storing grapes for some months, the informal buyers are buffering the effects of price fluctuations.

The context

Grape production is important in India. Grapes cover 162,000 hectares, representing 2.3% of the total fruit production area in 2021–22. The major grape-growing states are Maharashtra and Karnataka, respectively accounting for 70% and 25% of the national production (APEDA, 2023). More than 80% of the total production is consumed as table grapes. The peak season is March-April, during which more than 70% of the grapes are harvested. Because of insufficient and inadequate cold storage facilities, market gluts and price falls are very common in this period.

India is a net grape exporter (268,000 metric tons, worth 314 million USD in 2022–23). Grapes are exported through three channels: grower exporters, growers' cooperatives and trader exporters. These market players have their own facilities for pre-cooling and cold storage in the vicinity of major production sites.

Figure 1: Harvested grapes in the vineyard, Nashik District, Maharashtra.

Producers

About 80 percent of the farms in India are held by millions of smallholder farmers on less than two hectares of land. Apart from producers, they are also small entrepreneurs, traders, investors, and consumers, all in combination. They run their businesses in difficult and constraining circumstances.

Farmers incur a cost of around 670,000 Indian Rupees (INR) per hectare in establishing the orchard. Grape is a labour intensive crop, especially from flowering till fruit maturity (four months from October to January). Major operations include chemical spraying, thinning of bunches, covering of bunches by paper, cleaning of bunches by removing dead or rotten berries etc. Labour accounts for more than half of the operational expenses. The high use of pesticides, growth hormones and fertilizers is the second major contributor towards operational costs; for table varieties this is around INR 460,000 per hectare, whereas for export quality produce this is around INR 520,000 per hectare. All operations until and including harvesting are the responsibility of farmers (Mahajan, 2014).

Farmers in Maharashtra only sell a small part of the grapes locally (to local consumers, local retailers, at weekly markets and at roadside stalls). By far the largest part of the grapes (>85–90%) is sold to local buyers, locally known as 'Vyapari'. Vyapari establish informal supply agreements with farmers during the production season. At harvest time, they collect the grapes at the farm, and do the sorting, grading and packaging there. The packaged grapes are then sent to destination markets.

Informal and formal actors in domestic grape value chains

In this paper we map the domestic grape value chains. We follow the journey of the grapes from farmers to consumers, with specific attention for the role of informal midstream actors. By following the product, we follow the operations done, the costs incurred and prices received.

Diversity of value chains and midstream actors
The supply of grapes from farmers to different domestic markets and consumer groups is largely according to the following six typical domestic grape value chains. The first three value chains are informal, mainly for local markets. The next three typical value chains are more formalized, but still informal at the first stages. These value chains are for serving provincial and national markets, beyond the grape production zones. In three value chains, the informal buyers (Vyapari) play a central role (see VC 3, VC 4 and VC 5).

Informal value chains	Semi-formal value chains
VC1: Village marketing: farmers sell directly to consumers	**VC4:** Farmers sell to informal buyers (Vyapari), who sell to commission agents, who connect to wholesale traders, who sell to retailers, who sell to consumers
VC2: Rural *haats*: Farmers sell directly to local retailers during weekly markets, who sell to consumers	**VC5:** Farmers sell to informal buyers (Vyapari), who sell to commission agents or wholesale traders, who sell to primary wholesalers, who sell to secondary wholesalers in other towns, and then the chain continues to retailers and consumers
VC3: From producer to informal buyers (Vyapari), who sells to retailers, who sell to consumers	**VC6:** Distance marketing: from producers directly to commission agents or wholesale traders, who supply shops or supermarkets

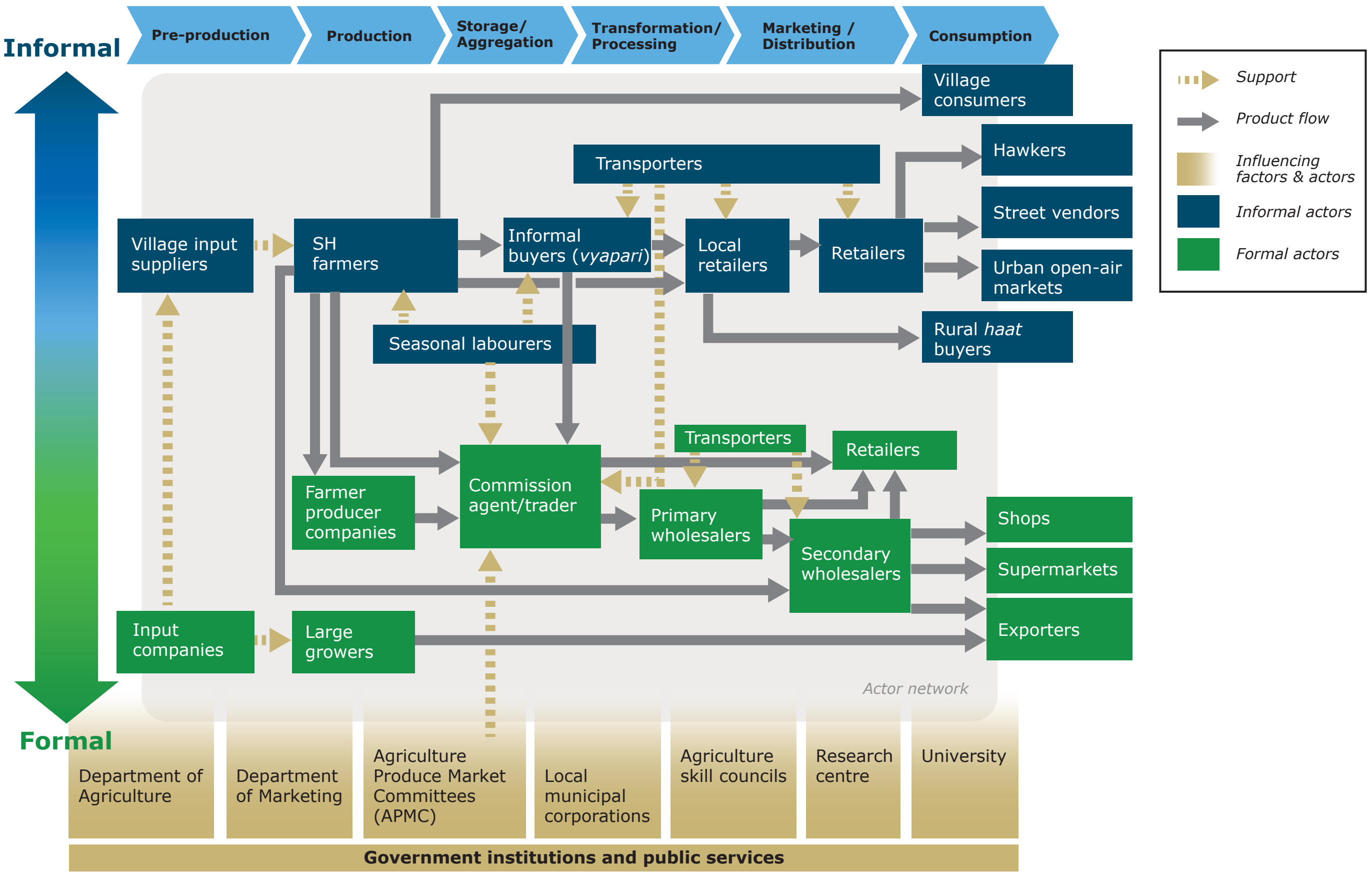

Figure 4: Value chains and actors – Grapes, Maharashtra, India.

Figure 3: Labourers of informal buyer (Vyapari) packaging grapes in farmers' vineyard, Nashik District, Maharashtra.

Figure 4: Packed grapes in corrugated fiber boxes, Nashik District, Maharashtra

Vyapari – Informal buyers establishing informal supply arrangements with farmers

The informal buyers, popularly known as Vyapari, play a very important role in domestic grape value chains. On the one hand they know the grape producers very well, and on the other hand they maintain a network with other traders, who are operating in major markets across the country.

Vyapari visit the farmers' vineyards when the grapes are nearing maturity (January-February). The grape purchase price is then decided upon. Depending upon the fruit size and quality, the price received by the farmer varies from INR 25–60 per kg. Payment terms also vary, depending on the relationship between the farmer and the Vyapari. However, a token amount is always paid to the farmer at the time of price fixation. The remaining payment is done within two weeks after harvesting.

Vyapari take orders over the phone from commission agents and wholesalers, and thus react on market demand. By making the connections between demand and supply, the Vyapari mitigate price fluctuations to some extent. Many Vyapari have own cold storage facilities. The storage of grapes for 2–3 months during the peak season provides a buffer against glut. And the storage also enables the Vyapari to fetch a better price during the lean season.

Seasonal labourers

The Vyapari collect the produce from the farm after manual colour and size sorting and grading, and packaging at the orchard. These activities are done by seasonal labourers hired for the entire grape season of 3–4 months. Most of these labourers come from Northern States; lower wages can be negotiated with them and they are more available compared to local labourers. Wages of farm labourers vary from INR 150–180 per day. A team of 3–4 people can grade and pack about 1.5 to 2 Metric Tons (MT) of grapes in a day and load it in the truck.

Figure 5: Female workers carrying crates with harvested grapes, Nashik, Maharashtra.

Figure 6: Woman worker inspecting hanging bunch of grapes in vineyard, Nashik, Maharashtra.

Commission agents

Commission agents (CAs) are formal players, regulated by the Agriculture Produce Market Committees (APMC) Act. They facilitate the auction of agricultural produce brought to wholesale markets. An open auction system prevails in these markets. The APMC act authorizes CAs to charge a commission of 5 to 10 % to the seller. Commission agents provide financial services to the grape buyers by making immediate payment to the seller on behalf of the buyer. Buyers have to pay the CA within one to two weeks, depending on their relationship. Buyers must pay an APMC market fee and a local tax levy (cess) of 1.05%. This is also routed through the Commission Agent.

Retailers

In number, most of the retailers in the grape value chains are informal: village retailers, small retailers in rural weekly markets (*haat*), retailers in urban open air markets, street vendors and hawkers, vegetable and fruit shops in cities etc. Retailers face many challenges: access and affordability of credit from wholesalers and financial institutions, limited infrastructure, high risks related to price volatility and the waste and loss of weight and quality of the grapes.

Figure 7: Street vendor selling fresh green grapes at his fruit stall, city of Mysore.

Figure 8: Man sells grapes in street car, New Delhi.

Costs and prices

For the case of the domestic value chain moving from the farmer, to the Vyapari to the Commission Agent to the wholesaler, retailer and consumer (Cf. VC 4 above), the operations and costs of one kg of fresh grapes are outlined in the box below.

The Vyapari is responsible for grading, packaging, loading and transport of the grapes to the APMC market and for unloading. Costs for bringing the produce from the farm to the market is INR 3.55/kg. The price realized at the APMC market is INR 41.55/kg, hence a gross margin for Vyapari of Rs 8/kg. He has to pay a commission of 8 per cent to the commission agent, which comes to around INR 3.32/kg. The Vyapari net profit is thus INR 4.68. The produce is bought by the wholesaler at the APMC market, who must pay the marketing cess of 1.05%. The wholesaler earns a margin of INR 4/kg and distributes grapes to various retailers.

The retailers have a gross margin of about INR 10/kg and thus the consumer price reaches up to INR 60/kg. The price paid by the consumer is thus two times the price realized by the farmer.

Box 1: Costs and prices per kg of grapes (in Indian Rupees; INR)

Farm gate price farmer	**30**
Grading, packaging and loading cost Vyapari	2.30
Transport to, and unloading at APMC market	1.25
Vyapari APMC commission of 8% paid to CA	3.32
Net profit Vyapari (Rs 8 minus commission paid)	4.68
Wholesaler APMC market fee of 1.05%	0.43
Wholesaler margin	4.00
Retailer net profit (Rs 10 minus Rs 4 losses at retail level	6.00
Consumer price:	**60**

Once grapes are packed by the Vyapari, there are hardly any losses until the produce is sold in the APMC to the wholesaler. Retailers lose out on the bunches of grapes, resulting in a lower net profit. The loss of grapes during retail is reported to be around 10%.

What if informal actors were not or less involved?

If the informal buyers would not be involved and would not play their current roles, then the farmers would have to harvest grapes themselves, undertake sorting and grading, packaging, transporting to the local APMC markets and then participate in the auction process. Farmers would then have to accept the rates as per buyer's demands. Without Vyapari, farmers would thus have to spend much time and incur significant costs, without much influence on the net profit they would make. In fact, the Vyapari know the markets better than farmers.

> *Informal buyers are buffering the effects of price fluctuations*

Because of their matching of demand and supply and their storage facilities, Vyapari are buffering the effects of price fluctuations.

In India, a great diversity of informal retailers play important roles to supply fruits and vegetables to the majority of consumers. They include retailers in villages, at rural weekly markets (*haat*), and open air markets, hawkers and street vendors in towns. Without retailers, much more grapes would go to waste.

Challenges and opportunities

The important challenges faced by the informal actors are the following:

- **Trust:** Because of cheating and non-payments, the trust of farmers in Vyapari is often low. Because of this situation, certain localities in the grape production zone have instructed Vyapari to identify themselves at nearby police stations.
- **Climate change:** Due to climatic conditions during the growing season, the grape harvest and/or the grape quality may be lower than expected. This puts pressure on the initial informal agreements between farmers and Vyapari. Because of lower quality, the grapes may for instance get damaged during transport.
- **Credit:** Informal actors, both Vyapari and retailers, do not get sufficient credit from financial institutions to invest in their businesses. Both need capital for their transactions. Vyapari must pay farmers immediately after harvest. Retailers have to pay cash to the wholesalers.
- **Infrastructure:** Vyapari are often not able to ensure appropriate cooling in their part of the value chain, because of high investment costs for cold storage infrastructure and/or refrigerated vans.
- **Food safety:** The use of chemicals is a serious problem. Consumers are increasingly aware about the use of growth regulators and pesticides, and avoid purchasing grapes. GrapeNet is an initiative to have an end-to-end system for monitoring pesticide residues in grapes for exports from India. A similar system for domestic supply of grapes needs to be developed.

Engaging with the informal economy: practical actions

The Department of Agriculture and the Directorate of Marketing (which regulates the APMCs) should collaborate to have an inventory of reliable Vyapari who come every year for collecting grapes at the grape farms. The identification of informal buyers can be instrumental to reduce the number of incidences of Vyapari cheating farmers.

The Department of Agriculture can support farmers to reduce the application of chemicals.

The Department of Agriculture, local Municipal Corporations and Agricultural Skill Councils can support retailers to organise themselves, train them in the selection and management of income generating activities, and in safe and hygienic handling of food products.

To acquire capital for their transactions with farmers, it is important to develop appropriate trade credit products for (reliable, registered) Vyapari.

To get starting capital for their small business, it is important to develop appropriate financial products for retailers. Finally, the formation of a multi-stakeholder Grape Development Council would be useful to address the issues of all grape value chain stakeholders. This Council should also be open to (representatives of) informal actors, with the aim to work for the inclusive growth of the grape industry and its stakeholders (SMART 2024).

References

SMART, 2024. Commodity Vision Plan for Grapes, Indo Grapes Development Council (IGDC).

APEDA, 2023. Grape exports, Agricultural and Processed Food Products Export Development Authority.

Mahajan, A. 2014. Value chain of grapes in Maharashtra, report submitted to NABARD (National Bank for Agriculture and Rural Development).

Wageningen University & Research
P.O. Box 47
6700 AB Wageningen
The Netherlands
T +31 (0) 317 48 07 00
www.wur.eu