

Incorporating Smallholder Fruit and Vegetable Farmers into Organized Retail Value Chains

By Deo Datt Singh and Donald M. Taylor¹

The rapid development of the organized retail food sector (modern format supermarkets, hypermarkets and specialty stores) is a significant indicator of the economic and cultural revolution that India is currently undergoing. This development combined with the potential for India to become an important exporter of fruit and vegetables poses significant growth opportunities for small-scale farmers and the rural economy. In 2001, the latest year for which data is available, there were approximately 25.4 million Indian fruit and vegetable farmers. Some 70 percent of these farmed plots of less than one hectare (2.5 acres). It requires an average of about 150 small-scale farmers to service a supermarket produce department year-round. Much of the current literature on the growth of the organized retail sector in developing economies focus on the difficulties that small-scale farmers encounter in attempting to sell to the supermarket sector; although there are also a number of cases where this has been possible. The following case study illustrates the successful incorporation of small-scale Indian fruit and vegetable farmers into organized retail supply chains.

Introduction

The India Growth Oriented Micro-Enterprise Development (GMED) program is sponsored by the U.S. Agency for International Development and managed by ACDI/VOCA, a Washington D.C. based international development consultancy. The program began in October 2004. Its goal is to develop initiatives leading to increases in employment through fostering the growth of micro and small enterprises. After several permutations, GMED management decided to concentrate program efforts on linking smallholder vegetable and fruit farmers to firms engaged in the organized food retail sector.

The rationale for this decision was based on the current rapid expansion in India of supermarkets; hypermarkets and specialty fresh produce outlets. (Reference to supermarkets in the remainder of this paper will be taken to include all of the above types of retail outlets). Supermarkets first entered the picture in India in the early 1990s,

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but growth in number of outlets was quite slow. This situation began to change in 2004-2005 with the beginnings of a consumer shift from traditional retail outlets to supermarkets and the consequent entry of many of the major Indian corporate groups into the organized food retail sector.

According to the findings of a recent joint study conducted by the Federation of Indian Chambers of Commerce and Industry and Ernst and Young, organized retail will advance from the current five percent of total retail to 30 percent over the next 10 years. The same study forecasts a more than doubling of the organized retail market during the coming three years, from the present 14 billion dollars to 30 billion dollars. This forecast may even be too conservative, however. According to a more recent study by Deloitte, Haskins and Sells, organized retail grew at an unprecedented rate in 2007, accounting for eight percent of total retail sales compared with five percent in 2006. Food and groceries account for some 74 percent of total Indian retail sales with food accounting for some 44 percent of fast moving consumer goods sales (FMCG) according to the Indian Brand Equity Foundation.

The burgeoning consumer preference for the supermarket experience has its roots in the rise of the urban middle class, a growing number of whom are young, upwardly mobile and less wedded to tradition than their parents. (There are 400 million people under age 21 in India). GDP growth of eight to nine percent per annum is placing more disposable income in the hands of these urban middle class consumers. Today there are 100 million Indian consumers whose incomes are the same as 60 percent of Malaysians and 80 percent of all Brazilians.

In addition to the rapid growth of the organized retail sector, there exists good potential for India to become an important exporter of fruit and vegetables. The country possesses a wide variety of agro-climatic zones, ranging from tropical to desert to temperate climates in the foothills of the Himalayas. India has the highest proportion of arable land to total land area of any country in the world. The country's location is favorable for trade with Europe, Southeast Asia and the Gulf. Rising transportation costs to these markets from North and South America caused by skyrocketing oil prices are significantly increasing India's comparative advantage in the export of fruit and vegetables.

These favorable market prospects pose significant growth opportunities for small-scale farmers and the Indian rural economy. In 2001, the latest year for which figures are available, there were approximately 25.4 million Indian fruit and vegetable farmers. Some 70 percent of these farmed plots of less than one hectare (2.5 acres). According to GMED estimates, it requires an average of about 150 small-scale farmers to service a supermarket produce department year-round. Given the number of organized fresh produce outlets already on the ground (one firm alone has already opened between 500 and 600 stores and continues to open new outlets every week) and those on the drawing board, the organized retail food sector could conceivably involve several million small-scale vegetable and fruit farmers over the next few years. Taking advantage of the development opportunities, however, will require a significant shift in the manner in which farmers market their fresh produce. Regulations have long restricted farmer sales to a single, government-mandated marketing channel, licensed

by individual state governments. Currently these regulations are being amended on a state by state basis to allow farmers to access alternative markets, including selling directly to supermarket buyers.

The Traditional Agricultural Marketing System

In late 2004, when the GMED program entered the scene, India had no modern fresh produce supply chains. Under the Agricultural Produce Marketing Committee Act (APMC), farmers were required to sell their products exclusively through government-mandated auction markets, known as mandis. Commission agents and brokers handle all mandi purchases, often in a collusive fashion. The mandis lack proper facilities for handling fresh produce, leading to excessive waste and loss of value. There is very little quality differentiation.

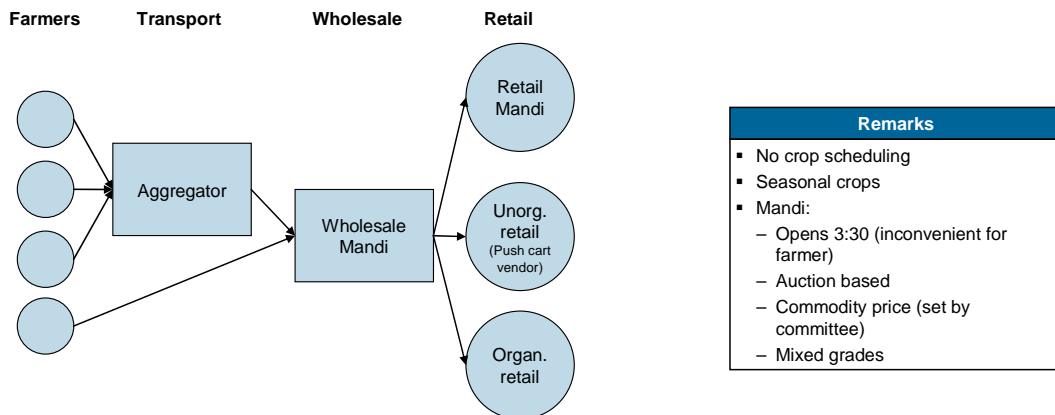
The farmer delivers his produce to the mandi, where he is charged a fee. He engages a commission agent, who does not take possession of the produce, to sell the produce to a broker. The farmer may need to spend an entire day waiting for the sale to take place. The produce often spends several hours exposed to the sun and heat before being loaded on a non-refrigerated truck for the journey to the next market or end user. The mandi system provides little or no incentive for farmers to improve their production and postharvest practices.

The central government has issued a revision to the APMC, providing farmers with alternatives to the mandi by allowing them to sell their produce to other buyers, including entering into contract growing arrangements. Agriculture is, however, a state subject in India, meaning that each state must enact its own version of the APMC revision. This is happening, slowly. There are still some problems, but the situation is improving.

Table 1

Farm to shelf horticulture supply chain in India

Traditional model



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The Need for a Paradigm Shift in Procurement Practices

Vegetables and fruit are particularly important to the competitive success of Indian supermarkets. The “supermarket revolution” in other developing countries started with staple commodities and processed food and only later progressed to sales of fresh produce and other perishables. In marked contrast, however, Indian supermarkets accorded prominence from the outset to vegetables and fruit. Several chains, in fact, concentrated exclusively on fresh produce.

This significant departure from the norm is probably due to traditional dietary preferences in India, where approximately a quarter of the population are vegetarians, but where even many non-vegetarians only eat meat occasionally, and where consumption of processed vegetables and fruit is almost non-existent (India is the world’s second largest producer of vegetables and fruit, but less than three percent of total production is processed).

In addition to the growth of supermarket chains, many of the firms engaged in organized retail are also entering the “cash and carry” business, acting as suppliers to their own as well as competitors’ fresh produce departments. Most firms, however, are still procuring from the mandis or through company owned country collection centers. These sourcing alternatives do not satisfy the competitive needs of modern food retailing. The supermarket buyer procuring from the mandi or through ad hoc purchases from individual farmers through a country collection center has little control over the quality, variety or volume of the vegetables and fruit being procured. There is no

possibility of introducing traceability, which will become mandatory with the entry of Walmart, Carrefour and other multinational chains.

The Indian consumer is becoming increasingly conscious of quality and food safety considerations, particularly in the case of fresh vegetables and fruit. Supermarket managers consider their fresh produce departments to be a principle attraction drawing consumers into their stores. There is a basic contradiction between the increasingly competitive requirements for stocking better quality fresh produce and the current procurement practices of the majority of the country's supermarket chains. The GMED program early on recognized in this contradiction a significant opportunity to further the small farmer development goals of the program while helping improve the supermarket industry.

The GMED Approach

Once GMED decided to concentrate on linking small vegetable and fruit farmers to organized retail buyers, a strategic approach was needed. Donor programs aimed at small farmer development in the past have tended to focus on improving production, with a consulting team assigned to work directly with the farmers. This has too often resulted in losing track of the need for sustainable access to profitable markets. Another shortcoming of the traditional approach is the fact that most improvement efforts come to an end as soon as the project closes.

The GMED program, in order to help ensure the sustainability and scalability of their efforts, adopted a value chain and embedded services approach. The value chain approach to development is based on the belief that the potential for growth and competitiveness for any industry is determined by the performance of firms at all levels of the value chain, large as well as small. The approach has the added benefit of shifting the development focus from a supply to a demand based model.

Rather than working directly with small farmers, the GMED consulting team decided to utilize an embedded services model as the delivery mechanism for providing farmers with technical and other assistance. This approach requires the purchasing firm to enter into a long term partnership with the farmers for fresh produce procurement. Extension services, demonstration plots and postharvest facilities are provided to the farmers by the firm purchasing the produce, as an integral part of the fresh produce procurement transaction. Introducing this approach required a long and sometimes painful learning process, for the farmers, the corporate buyers and the consulting team, but it ultimately proved successful.

Initial Skepticism

The GMED program entered India in late 2004. This marked the first attempt at enterprise development by the India USAID Mission and the first India assignment in more than two decades for ACIDI/VOCA. It also marked the American program manager's initial exposure to India. Compounding the difficulties posed by the lack of familiarity with the local situation was the fact that there had been very few attempts in the past to organize small-scale Indian vegetable and fruit farmers to supply the organized retail sector. The lack of familiarity with the playing field was somewhat ameliorated, however, by recruiting a consulting team composed primarily of relatively

young middle managers recruited from leading Indian and multi-national agribusiness firms.

GMED initially approached several of the firms that at the time represented major players in Indian organized retail and offered assistance in setting up their fresh produce supply chains. (The present plethora of new investors in the sector was just beginning to appear on the scene). All of the firms that were approached indicated their interest in obtaining assistance in developing fresh produce supply chain facilities and systems.

When the GMED team queried these firms as to how many small-scale producers they intended to involve in their fresh produce supply chains, however, the universal reaction was “you cannot trust small farmers to be reliable suppliers to supermarkets”. The firms already in business were primarily purchasing through the mandi system. The new entrants into the sector planned to follow this system, or, alternatively, to either acquire land and operate their own production bases, or deal only with large farmers. These approaches were contrary to GMED’s mandate from USAID to promote the growth of small farmers, thus the program was circumscribed from working with these firms. As it turned out later, these approaches also did not match the realities of the Indian fruit and vegetable production sector, which as noted above is largely dominated by small farms.

GMED concentrated for the first several project months on program components other than FFV while continuing to search for a suitable supermarket partner. The search finally paid off when the GMED team met representatives of a major Indian conglomerate that was planning for the first time to enter the fresh produce wholesale and retail field. The firm was seeking technical assistance. GMED, after intensive discussions with the firm, was able to convince management to base their fresh produce procurement program on organized clusters of small-scale farmers.

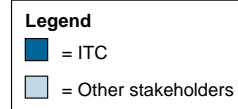
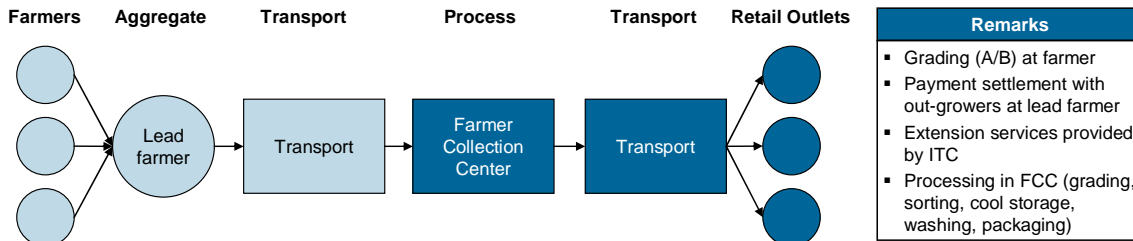
The GMED Experience

GMED assisted the firm in setting up three pilot farmer clusters composed of approximately 500 vegetable farmers in Punjab, Andhra Pradesh and Maharashtra states. GMED developed criteria for cluster and farmer selection, designed a technical assistance and support program and recommended measures for building farmer loyalty.

The clusters were organized around lead farmers, each of whom mentored approximately 12 to 15 outgrowers. The lead farmers were elected by the outgrowers. The partner firm hired extension agents, constructed cluster level collection stations and helped install demonstration plots at the lead farms. GMED introduced packages of improved production and postharvest practices, modified to fit conditions in each of the three cluster areas, and trained company extension agents to transfer the practices to the cluster farmers.

Farm to shelf horticulture supply chain

GMED Model



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The simple, inexpensive practices introduced by GMED did not represent high technology. They are common to farmers in many parts of the world. These practices include soil and water testing, installation of tray nurseries, shade netting for appropriate crops, raised beds with plastic mulching, staking of vine plants, implements to ensure uniform planting depth and spacing and proper field preparation, and similar measures. The introduction of drip irrigation and fertigation proved to be very important under Indian cropping conditions.

Indian vegetable farmers in many cases know about these practices, but given the traditional marketing system, have had no incentive to adopt them. Even if they had had the desire to adopt the practices, there was no one available to show them how to do so. Indian government extension services are seriously under staffed. Most Indian farmers seldom or never encounter a government extension worker. The provision of competent extension services by the buyer turned out to be the most important element in the continuity of the relationship with farmer clusters.

The buyer/farmer partnership satisfies the need of the farmer for access to assured, higher value markets and the ability to acquire the technical skills required to satisfy the requirements of these markets. It also provides a solution to the supermarket buyer's requirements—the ability to acquire a reliable supply of the proper quality fresh produce at the time it is needed. In the case of the GMED pilot program, the farmers experienced reduced production costs averaging 16 to 18 percent, significant quality improvement, gains in productivity, and increases in net income that averaged more than 30 percent. The company gained the reputation, and the competitive

advantage, of having the best quality fresh produce in the market. Two years after the pilot program commenced, the company has embarked on a major expansion of its retail outlets and its small farmer production base.

In September 2006 the soft opening of a cash and carry outlet at Hyderabad featured “standing room only” crowd of customers. One of the biggest draw was a bin of premium quality tomatoes, the “best to be found in Hyderabad” according to one of the customers. Bhupal Reddy, the farmer who produced the premium tomatoes, is s lead farmer. His two acre farm at Annasagar village in Andhra Pradesh has become a showcase for improved production practices since the GMED program began helping him develop demonstration plot using modern farming techniques and equipment. Mr. Reddy, who has been farming in the same location for the past 20 years, was able to increase his daily tomato picking per acre from an average 250 kg. to up to 800 kg. His income from the current crop increased by about 50 percent compared with the last time he grew tomatoes. In addition to getting higher yields and premium prices, Mr. Reddy was able to save some 40% on fertilizer and pesticide costs, and, by selling directly to the store, saved on transportation cost and the commission that he would have paid to the Mandi trader. In addition to working his own farm, Mr. Reddy as an lead farmer introduced 10 of his neighbors to the GMED package of practices and procurement system.



These results were not obtained without difficulty, however. The company had to be convinced that its field extension agents were the key to project success and should be given adequate compensation and recognition. There were initial misunderstandings between the farmers and the company as to how much of the farmers’ total production the company was committed to purchase. After several months of sourcing from one of the clusters, the company was informed by local government that since its retail outlet was located within the city limits, they would have to procure their vegetables in future from the municipal mandi. The start-up difficulties were subsequently solved, however, and the company remains firmly committed to the small farmer partnership model.

During the past three years, there has been significant progress in the Indian supermarket sector. Many more firms have entered the industry. Existing firms are rapidly expanding, both in the number of outlets and in their geographic area of coverage. Despite the fact that foreign investment in retail is still banned, several foreign firms have already taken advantage of the provision allowing 100 percent foreign investment in

cash and carry (wholesaling). Metro (Germany) now has four big box stores in three major metropolitan areas. Walmart has entered into partnership with Bharti Retail, with Walmart handling the supply chain backend and Bharti opening retail outlets. Carrefour is reportedly close to closing a market entry deal. Spar and several other multi-nationals are already set up, either through franchising or cash and carry.

The growing competition among the many corporate groups involved in attempting to attract consumer footfalls to organized retail food outlets is also changing the way that the industry is structuring their vegetable and fruit procurement programs. The supermarket produce department is seen as the major customer attraction. Quality and regularity of fresh produce supply are already important competitive factors. Food safety is becoming increasingly important to Indian consumers. (Pesticide residues on fresh vegetables and fruit purchases through traditional channels are considered by Indian consumers to be a serious problem).

Supermarket chains sourcing their fresh produce through the mandi system or through ad hoc purchases from traders or individual farmers have little or no control over day to day quality, reliability of supply or the varieties of produce available. Poor handling and lack of adequate postharvest facilities throughout the supply chain result in a high degree of waste and loss of value between the farm gate and the supermarket. Traceability will become an essential factor in the near future. Indian vegetable and fruit farmers will eventually, sooner rather than later, be required to meet GlobalGAP, HAACP and other applicable food quality and safety standards. The solution to these constraints is for the supermarket buyer to be involved in all aspects of the production and postharvest process.

In order to ensure quality, reliability of supply and food safety, most of the supermarket chains and their cash and carry suppliers are seriously considering forming ongoing supply chain partnerships with small scale vegetable and fruit farmers, following the example pioneered by the GMED program and its initial corporate partner. Several are already doing so. Three other organized retail and export firms have also sought assistance from the program for putting such a system into practice. While the GMED program cannot take full credit for the shift in organized retail procurement practices, GMED was the first to demonstrate conclusively that small-scale vegetable and fruit farmers could be successfully incorporated into organized retail supply chains.

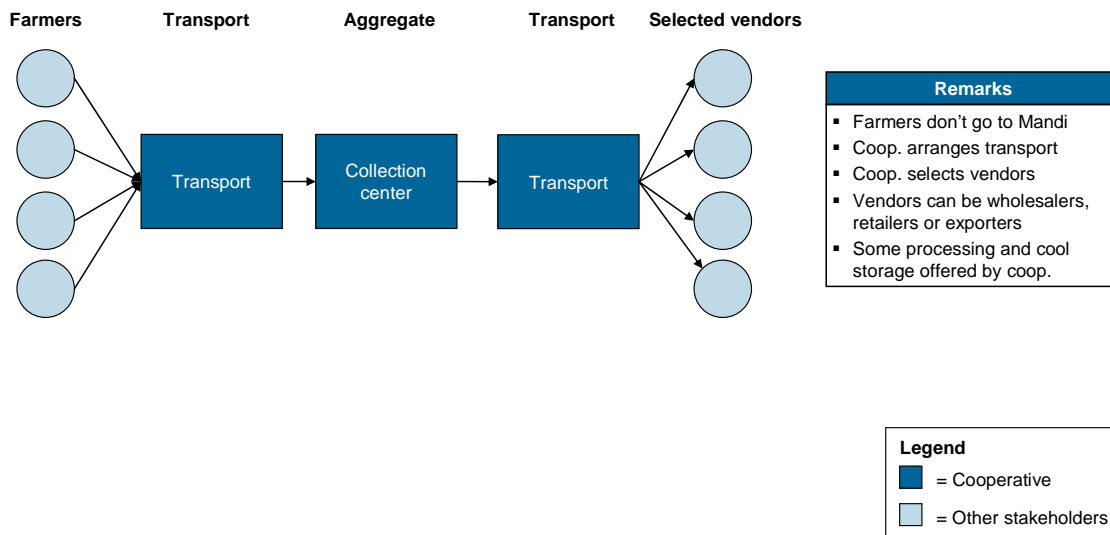
Supermarkets, however, would prefer not to have to deal directly with small farmers. This is not one of their core competencies. As an alternative, a number of firms have begun to specialize in the cash and carry business, serving the needs of the supermarket chains. Some of the cash and carry specialists are independent, while others are subsidiaries of the supermarket firms. The majority of the cash and carry specialist are, however, are still procuring from the mandis. This will have to change if these firms are to be a competitive factor in organized retail.

A Second Model The direct buyer to farmer model introduced by GMED in India presupposes that the initiative for the arrangement originates with the buyer. GMED has also initiated a second model, based on upgrading the capabilities of a 5,400 member vegetable and fruit growing cooperative to meet the requirements of organized retail.

GMED “adopted” this cooperative and began organizing a lead farmer-outgrower production system, upgrading farmer skills, and searching for market linkages. Several months ago GMED was successful in forging a procurement partnership between Nandani and one of the larger Indian wholesale and retail food distributors. The company is hiring extension agents to work with the farmers, putting up lead farmer demonstration plots, and providing on-site collection centers. The company will install a fresh cut line at the cooperative headquarters, and will assist in renovating a cold storage facility belonging to the cooperative. In addition to providing a market for cooperative-grown vegetables and fruit, the partnership will provide employment at the fresh cut operation to large numbers of local farm women. GMED is assisting the cooperative to seek links with other organized retail firms. The search should be made easier by the successful arrangement with the cooperatives initial organized wholesale and retail partner.

Farm to shelf horticulture supply chain

Cooperative model (e.g. Nandani)



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A second GMED affiliated development program, the IGP project, also sponsored by USAID and managed by ACDI/VOCA, is aimed at easing the task of introducing small-scale Indian vegetable and fruit farmers to high value organized retail and export markets through introduction of an ICT-enabled farmer technical information and supply chain management program based on mobile connectivity. GMED is partnering with one of the top-rated Indian IT firms, Infosys, in the design, development and commercialization of the application.

The program will provide farmers with real time technical information on soil, water and crop management, pest and disease control measures, weather forecasts and other critical technical information. It will link retail outlets directly with farmers and with all other elements of the fresh produce supply chain, enabling the retailers and producers to jointly plan cropping schedules to meet retailer needs and facilitating control of the entire process from planting to placing products on retail shelves. It will provide the farmer with the means to produce for specific markets, rather than growing his crops and then hoping to find suitable markets at harvest time.

The key link in the program will be field extension agents equipped with handheld communication devices (high end mobile phones or PDAs). The agents will maintain direct personal contact with the producers. They will be linked to a technical data base and to on-call experts in order to provide the farmer with the technical information services. The extension agents will also be linked to retailer buyers in order to transmit information from the buyers to on cropping schedules, types of products to be delivered at specific times and other crop planning information, including scheduling of production inputs and of crop deliveries.

The GMED program ends in September 2008. The success of the efforts by the GMED team to integrate small-scale Indian vegetable and fruit farmers into organized retail and export supply chains has resulted in plans by the team members to establish a commercial company to carry on these efforts after the GMED program officially closes.

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