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## **Evaluating Overall Performances of the Banana Industry in West Bengal State, India**

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### **Abstract**

With 29.7 million tons per annum, India produces 20% of world banana production. Despite this success, the country is not ranked as either a major or a minor banana exporting country. The goal of this exploratory research was to evaluate the banana sector in the banana producing areas of Kolkata, West Bengal State of India, in order to identify possible strengths and weaknesses that might impact the complete banana value chain (VC). We found major problems in the complete value chain, including production, transportation, distribution, marketing, and overall quality.

**Keywords:** banana, distribution, marketing, production, quality, transportation, value chain

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## Introduction

With a volume of 29.7 million tons per annum, India is the largest producer of bananas in the world, accounting for about 20% of the world banana production. Despite this success, the country is not ranked as either a major or a minor banana exporting country. The principle goal of this exploratory research was to evaluate the banana sector in order to identify possible strengths and weaknesses that might impact the complete banana value chain (VC). We found major problems in the complete value chain, including in production, transportation, distribution, marketing, and overall quality.

By studying the banana value chain business model of the Keventer Agro Limited Company in Kolkata, we specifically set out to

1. Assess domestic banana production technologies in Bengal State;
2. Evaluate domestic and export market competitiveness;
3. Investigate SWOT (strengths, weaknesses, opportunities, threats) in the value chain;
4. Review India's import/export policies for fresh fruits, with a special focus on West Bengal State.

## Material and Methods

This exploratory research took place from July 5–10, 2015. During this time we visited almost all of the banana producing regions in the West Bengal State of India. We first visited Keventer Agro Limited Fresh Company, a Kolkata-based banana-ripening facility in Basarat. A field director was assigned to guide us through the production regions of the state up to the Bangladesh border. We also visited middlemen, stakeholders, cooperatives, and individual growers to collect production and marketing information aimed at tracing the complete banana value chain.

Most growers in Kolkata cultivate a G9 banana cultivar also known as “Grand Nain,” a Cavendish variety belonging to the *Musa acuminata* spp. (Fonsah and Chidebelu, 2012; Fonsah et al., 2007a,b; Fonsah et al., 2010). Grand Nain is classified as an AAA genotype and is a triploid, which makes it susceptible to disease pressures (Stover and Simmons, 1997; Robinson, 1995; Fonsah et al., 2007b). The word “Grand” is actually borrowed from French, meaning “Big” or “Big Bananas.” At this time, production is not a major problem in the Bengal State. Indian growers have some successful banana production and planting techniques that produce big, healthy banana bunches with an average bunch weight of 40 kg. Planting distance was 6 x 6 ft. with an overall density of 400 plants/bigha<sup>1</sup> (Fonsah et al., 2005; Fonsah et al., 2006). Planting distance and density were the same for both G9 (Grand Nain) and local cultivars. Tissue cultures were obtained from Keventer. Various forms of N-P-K fertilizers were used but no one had ever done a soil test (Fonsah, 2003; Robinson, 2003; Fonsah et al., 2005).

## Findings

### *Good Agricultural Practices (GAP) and Quality*

Good agricultural practices (GAP) are still lacking. For instance, no de-leafing or fruit obstacle removal were practiced. Bananas don't do well with weeds. Additionally, fruit quality was compromised; fresh fruits were loaded and transported in trucks, increasing both quality defects and post-harvest injuries (Fonsah and Adamu, 2004; Fonsah and Chidebelu, 1995, 2012).

### *Disease Problems*

The major problem in Indian banana production is disease, including yellow Sigatoka disease caused by *Mycosphaerella musicola* and black Sigatoka caused by *Mycosphaerella fijiensis*. There is also banana bunchy top virus (BBTV), which can spread fast if not well controlled. However, due to the production cycle—which goes through mother-daughter-granddaughter or plant crop – first and second ratoon—before crop rotation takes place, it might be easier to manage the disease pressures economically. The three-crop cycle takes from 27 to 30 months (Fonsah and Chidebelu, 1995; Fonsah and Chidebelu, 2012; Stover and Simmons, 1987; Robinson, 1993; Robinson, 1996; Fonsah et al., 2010).

### *Production Costs*

On an average, total annual production cost for a G9 banana farm is about 60,000 rupees<sup>2</sup>/bigha. Producers reported total net returns of about 300,000 rupees (INR) in a two-year farming cycle constituting three harvests. Total reported production costs for the local variety were 80,000 INR, which generated net returns of approximately 200,000 INR in a 27-month farming cycle with three harvests. High profitability was causing farmers to switch from Jute-plant production to bananas (Fonsah et al., 2007a; Fonsah et al., 2007b; Fonsah et al., 2011).

### *Banana Retail Prices*

The supermarket in downtown Kolkata displayed four kinds of bananas on the shelf: the Cavendish (G9), two local varieties that looked like Champa-kola and Shabri-kola, and—surprisingly—a local organic banana. The G9 sold for 30 INR/kg. The organic option sold for 35 INR for four small fingers and the two local varieties sold for 6 INR and 5 INR/finger each, respectively. Banana blossoms, which are eaten as a vegetable in some Asian countries, were also available for purchase at 27 INR each. This product could be a readily exploitable niche market. Most farmers did not know that banana flowers could be eaten; they cut and threw them in the field.

## Banana Supply Value Chain Model

### *Market Share and Profit Margins*

We were told that an operation like Keventer requires a supply of 10 metric tons (MT) of fruit per day to be sustainable. At the moment, Keventer has exceeded that target fourfold, producing 40 MT/day in seven ripening chambers. Kolkata consumes around 400 MT of bananas daily; Keventer supplies approximately 40 MT/day, roughly 10% of total market share, which leaves them room for expansion. Expansion plans are being finalized, with the aim of opening facilities in Siliguri and Ranchi (Jharkhand), each with a capacity of 10 MT/day (Fonsah et al., 2011).

Infrastructural set-up costs for a small ripening operation with a 10 MT/day capacity are 7–8 million INR. Including working capital, the required investment is about 20 million INR. In West Bengal the peak season for banana is the Ramadan Holy Season, when bananas are important for Iftar.

### *Import/Export*

Presently, demand for bananas in India is higher than supply. As a result, import/export ventures are not appealing to businesses. Moreover, Indian import/export policies for fresh produce—especially bananas, which are a staple—are a major hindrance with too many bottlenecks involved. Trade barriers between India and Bangladesh have encouraged smuggling practices and discouraged official import/export trading between the two countries. Many tariffs and non-tariff barriers discourage businesses, especially for perishable goods like bananas.

### *World Banana Suppliers*

Recent reports show that India ranks first in terms of world banana production, followed by China and the Philippines. Most big producers are not exporters. It is possible that their production is just enough for local consumption, creating an equilibrium. Empirically, the story might have another twist. If modern banana agricultural production technologies could be implemented to improve overall quality to meet export requirements, then India could be a player in the banana export market by producing for both domestic and foreign markets.

## Conclusion

Although India is the largest producer of bananas in the world, they have not yet exploited their full potential to become producers, marketers, and exporters of premium quality bananas. Domestically, India has huge market demand and per capita consumption is skyrocketing. Projections show that India will surpass China and become the most populated country in the world by 2028. Given this growth rate, demand for bananas—a favorite fruit—will continue to increase. The problems plaguing the industry are pest and disease control and a lack of modern agricultural practices in producing quality bananas. If producers opt to attempt exporting they will need to address these issues (Fonsah, 2002). A Total Quality Management (TQM) strategy

(an integrated banana management approach) is recommended to revamp the entire India banana industry, which would render Keventer Agro Limited even more profitable and efficient.

### *Recommendations*

Although India leads Bangladesh in banana production and marketing, the country trails other banana-growing countries, especially exporting countries in Africa, Central and South America, and Asia (particularly the Philippines). Keventer Agro Limited and other companies that have developed models to improve the entire banana value chain in India deserve recognition and praise. However, their models are still below international norms and standards. Fortunately, there is a high degree of willingness to learn and improve. USAID/DAI can capitalize on that willingness and provide necessary assistance through transferred technology, capacity building, training, and education.

### **Acknowledgement**

This study was funded by the USAID/DAI Feed the Future India Agricultural Value Chains Project for which the authors are indebted and grateful. We are equally thankful to the Management of Keventer Agro Limited Fresh for sharing their experience with us.

### **Notes**

<sup>1</sup>A bigha is approximately equal to 0.4005 acres. However, in Punjab, 4 bigha = 1 acre

<sup>2</sup>One (1) Indian rupee = \$0.015 (as of October 23, 2016).

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