FARMERSFIRST
agri solutions & services

Monsanto Vegetable Seed Business

Seminis Brand - Reaching Out to Small Vegetable Farmers

Contents

The Story of Small Vegetable Farmers

There are about 500 million small farmers (with holdings of less than ~5 HA, one hectare is equal to 2.4 acres) around the world. Of these, 20 million farmers grow vegetables in approximately 20 countries (see Annexure 1). This population of farmers exists in regions across Asia, Africa and Eastern Europe and represents a market for vegetable seeds of nearly $ 1.8 B by 2018.

Market

The global market is segmented by crop type that comprises brassica, cucurbit, leafy root-bulb, and solanaceae. Brassica crops include cabbage, cauliflower, and broccoli; cucurbit crops include melon, watermelon, cucumber, and squash; leafy crops include lettuce, and spinach; root bulb crops take in onion and carrot; solanaceae crop consists of pepper, eggplant, and tomato. Solanaceae crops dominate the global fruit & vegetable seed market. Brazil is the leading market of Latin America while China and France are the largest markets in Asia-Pacific and Europe, respectively. The seed market is primarily driven by per capita decreasing land, high profitability margin, acceptance of precision farming, and protected agriculture, change in farming practices and technology. Monsanto (U.S.), Syngenta (Switzerland), Bayer CropScience (Germany), Limagrain (France), Takii & Co. Ltd (Japan), Sakata Seed Corp (Japan), and Rijk Zwaan (The Netherlands), among others are the key players of the fruit & vegetable seed market. These companies have adopted various strategies to grow in the future with a global presence. The launch of new products is the most common strategy followed by these companies, a trend that has given new dimensions to the market from 2009 to 2013. Expansions and investment is the second most regularly employed strategy from 2009 to 2013 for the same period. Europe is the main market for fruit & vegetable seed. It was $2,199.2 million in 2012 and is projected to grow at a CAGR of 12.8% from 2013 to 2018, to be valued at $4,562.4 million by 2018. Latin America is the fastest growing region with a CAGR of 13.4% during the period under review. North America was the second largest seed market, contributing 27.05% of the market share in 2012. Agriculture universities, governments and organizations such as Food & Agriculture organization of the UN have significantly studied the markets in these geographies and identified the growth needs of farmers. While access to good quality seeds is seen as one critical requirement for improved lives of farmers, another important factor is increasing the per acre agriculture productivity.

For many small farmers, access to agriculture inputs or advices that could help them to understand their agronomic practices better, is a challenge. They are always in the need for personalized information on seeds, specific farm issues, and effective crop management.

Monsanto's vegetable seed business consists of over 110 varieties of vegetables in small packets sold to open field farmers [sale to hot houses with controlled climate is a separate market channel] through dealers in the local market. The primary brand for Monsanto open field seed is *Seminis.*

The typical small vegetable farmer in a developing country may have only limited, if any, ability to read and write. The farmer generally is generally lacking in access to transportation, modern equipment and crop storage. The vegetables are usually sold immediately upon harvest to a local intermediary. Other than the price offered by the intermediary, the farmer may having little access to information or alternatives.

The typical small vegetable farmer in a developing country grows 2-3 crops per year. The most common types of seed sold are hot pepper, tomato, cucumber, cabbage and cauliflower, but, there are many varieties within each type and many other vegetable types. The farmer will purchase 4-5 packets of seed per hectare. The farmer will be able to choose from Monsanto seeds as well as competitively priced vegetable seeds from other international brands [such as Syngenta, Bayer] and locally produced varieties at a lower cost.

Seed Price

Vegetable	Seed rate (gm/acre)	No of packets (SKU : 10gms)	Seed cost (USD)/packet 1USD=60INR
Pepper	80	8	4.17
Tomato	70	7	4.5
Cucumber	300	30	2.5
Cauliflower	120	12	4.17
Cabbages	120	12	2
Beans	7000	700	0.08

Anywhere, Anytime - The Mobility Advantage

Technology penetration, especially through mobile phones, has grown significantly in geographies with large proportion of small farmers – most of geographies have over 70% penetration (see Annexure 2) today. The Ericsson Mobility Report of 2014, says that mobile subscriptions will reach 9.3 billion by 2019, 5.6 billion of which will be for smartphones. In developing countries, this trend is further accentuated with mobile phones being used to run day-to-day activities (for example, M-Pesa in Kenya). Even among the rural population, 1 in every 16 people, personally own a mobile phone and nearly every farmer has access through his extended family. Mobile telephony also, significantly lowers the transaction costs of reaching and interacting with remote, fragmented small farmers.

In India, with a population of 1.3 billion people, there are over 900,000 subscribers to mobile telephone services and the infrastructure has grown quickly with multiple providers of service. Due to the multiplicity of cellular service providers retention of the telephone number is not a priority for persons seeking the lowest cost per outgoing call. Generally incoming calls are free.

In the rural areas, the typical cellular telephone is a small screen with limited character visibility and limited or no access to the internet.

AN INDIAN SUCCESS STORY - MONSANTO FARM AGVISORY SERVICES

Initially started as Dr. Dekalb Farm Care for corn, Monsanto Farm Agvisory Service (MFAS) is a service that leverages mobile penetration in rural India, and provides automated agronomic advice to Monsanto's farmers during the growing season. It enables Monsanto to build a stronger relationship with the farmer. This service provides farmers with personalized advisories and information about Monsanto hybrids and other crop management information that helps farmers to increase productivity.

Mobile penetration in rural India is increasing at a very rapid pace with close to 150 million rural subscribers. The percentage of farmers having mobile phones is even higher in certain segments. It provides a unique opportunity in terms of a blend of reach and specificity. It establishes user identity and thereby enables personalized content delivery.

Today, more than 1 million farmer customers benefit from Monsanto Farm Agvisory Services. The Monsanto service for vegetable crops is called *"Seminis Gurukulam"* [translated 'Seminis Teacher's house'.] The service for vegetables has been rolled out in 16 states, in 7 different languages, for Hot Pepper, Tomato, Cabbage and Cauliflower. The service is also extended through public private partnerships with five state governments for pigeon pea and corn farmers thus helping us in our freedom to operate initiatives. When the farmer purchases a packet of *Seminis* vegetable seeds, the packet contains a unique identification number. By calling the national toll free number 1800 3000 0303 on the packet, the farmer is asked to provide the unique seed packet registration number and information about himself and his farm. The seed variety and farm location give Monsanto commercial information about the dealer from whom the farmer purchased the seed. This may provide an opportunity to offer the farmer other agriculture products and services relevant to his specific needs.

After registering, the farmer receives regular automated information specific to his crop and farm conditions from national sources of information about soil types, weather, pests and crop diseases particular to his farm location. In addition, if the farmer has a question, the farmer can call the Monsanto Farm Agvisory services. The system automatically routes the farmer's call to the *Seminis Gurkulam* representative who has the information about the farmer on screen. Based on the accumulated data, the call center representative can provide specific responses to common questions. 98% of the issues are resolved on the first call, the remaining 2% are routed to a specialist. There are about 400,000 calls per year that are resolved by a specialist.

The cost of the service to Monsanto averages $1 per farmer per year. Currently, except for the purchase of the seed and the cost of the call to the Monsanto Farm Agvisory service there is no charge to the farmer for the services. Monsanto has not attempted to recoup the cost of the service in an effort to build the relationship with the farmers and to encourage loyalty to the *Seminis* brand and confidence in the quality of the service and advice.

An independent research that was conducted points at $20-100 per acre as a benefit for the farmers. It also mentions that more than 80% who relate to the brand are repeat customers.

Reaching Out Further - FarmersFirst

The growing demand from our farmer customers to avail services that provide agronomy advices, which would help them improve their productivity, has motivated us to reach out to the small farmers across the world. With the foundation laid with our Monsanto Farm Agvisory Service, we believe the service could also help Monsanto in influencing markets in developing countries across Asia, Africa and Eastern Europe.

With a vision to build a credible “information highway”, to increase access to small farmers and serve them that would lend itself to “mass customization”, the project aims at connecting all influencers and parties in the farmer’s ecosystem. The key objective of the project is to serve small farmers by building a platform to provide higher quality agronomy advices, provide them increased access to markets and help them in exploring and accessing finance opportunities. For Monsanto, the aim is to serve the core seed sale business by retaining existing customers and recruiting new customers. The project will also explore opportunities for Monsanto to use this as a direct marketing channel to reach out to small farmers. The future holds opportunities to build an independent business through monetizable B2B and B2C services by laying the path for an information highway.

Currently, the target audience for Phase 1 of the project is farmers who have less than 5 HA of land, and grows corn. The first phase looks at capitalizing the existing system of MFAS, and expanding the access to more number of farmers (including non-Monsanto customers). Technology solutions that would allow farmers to self-register without any human interaction or intervention (such as voice based registration system) are being evaluated and functionalities are being tested for suitability to the service. The retention strategy in the first phase focuses on providing registered farmer customers with customized advisory throughout their cropping cycle.

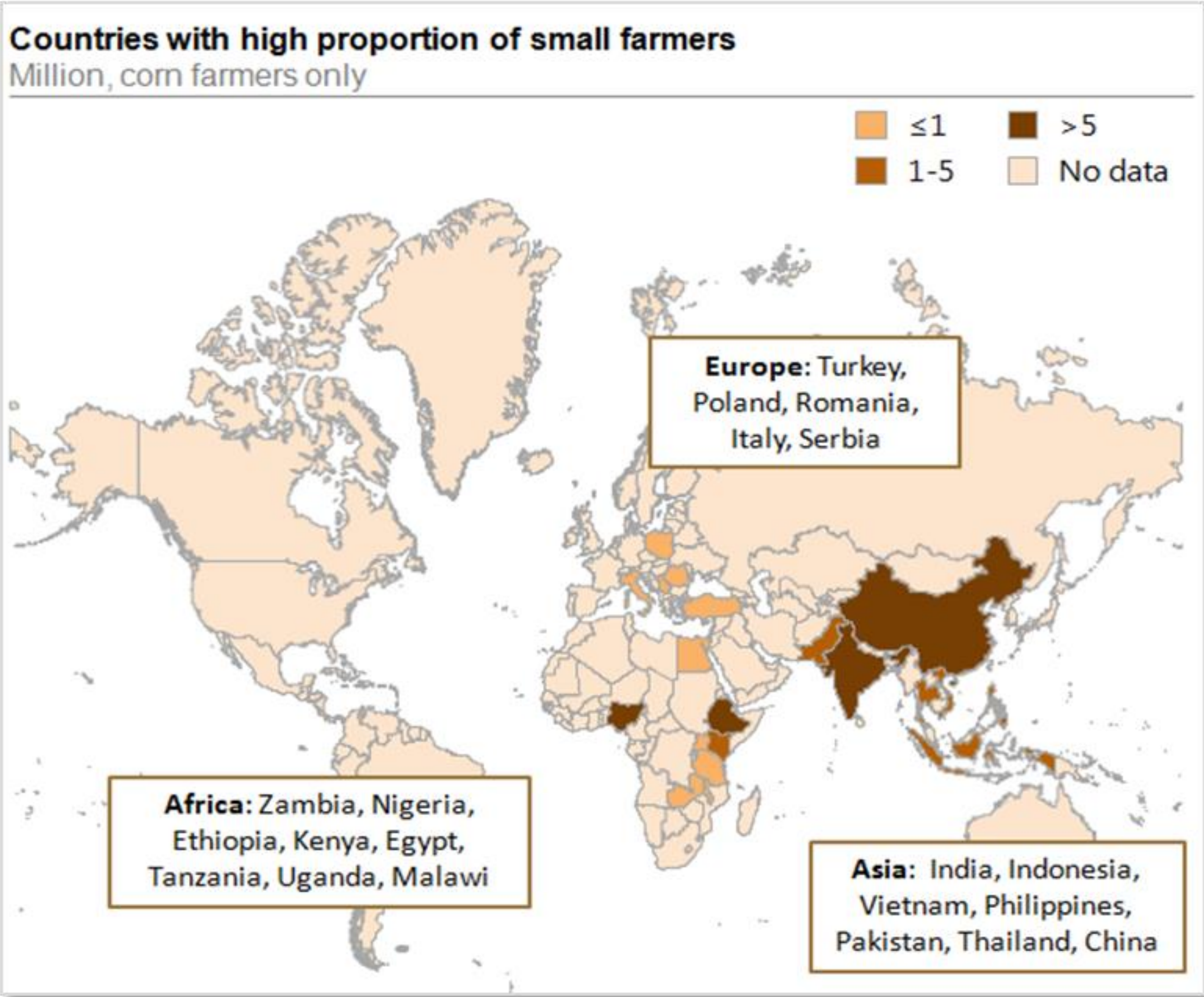
The retailer from whom a farmer buys a seed is an effective influencer, and an additional scope of the project is to provide the retailers with business solutions that would help them to manage their business better. In turn, the retailers could help us in registering more farmers into the advisory system. In the mature phase offering, we help farmers in getting the right price for their produce by connecting farmers to grain purchasers. Monsanto also looks at exploring partnerships with credit / insurance providers, that would help bring more farmer customers into the ecosystem.

FarmersFirst is an initiative that would help farmers across developing countries in improving their lives, with easy access to information. Monsanto would help create an ecosystem that is self-sustainable and our promise of producing more, conserving more, and helping to improve lives of our farmer customers would then be a reality.

How could we go further?

1. To commercialize the service for vegetables in other regions or countries, Monsanto should have a distinctive, short, simple message that conveys via a simple cell phone the value of the *Seminis* service to farmers. What would be the message- sound, symbol or phrase that would be memorable [and translatable to other languages and geographies] that would associate *Seminis* vegetable seed with a larger, more profitable crop for the farmer?
2. What are the possible partnerships Monsanto could develop to profitably underwrite the initial and on-going investment in the Monsanto Agvisory Services?
3. What are the other tangible and intangible benefits to Monsanto that could be achieved with Monsanto Agvisory Services platform?

ANNEXURE 1 – COUNTRIES WITH SMALL FARMERS



Annexure 2 – Mobile Penetration