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THE GLOBAL ANALYST

July 2013

A BUSINESS & FINANCE MONTHLY

Price: Rs. 100



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DIRECT FARM PROGRAM

AN INNOVATIVE MODEL

ISSN 2320-5628



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Reviving Agriculture Can 'Direct Farm Program'



Indian agriculture is plagued with small land holdings, stagnant productivity and issues in input management. Inefficient supply chain and too many intermediaries in the value chain add to the supply side problem. Direct Farming has emerged as one of the 'means' towards the 'end' that is - an efficient value chain. Direct Farming creates a virtuous cycle of high investment and enhanced productivity by linking producers with profitable markets. It adds to the risk-taking capability of the grower. But Direct Farming is not the panacea for all the ills in the sector. A slew of initiatives is necessary to accelerate the long-term of growth of the sector from 3 to 4 per cent, opines Deepak Nighoskar, Managing Partner, Avizare Solutions, Gurgaon, India.

be an answer?



My maid couldn't muster the courage to cut these costly patented, organic stuff..



If the coin is flipped, an entirely different picture emerges. Long-term agriculture growth has stagnated around 3 per cent - growth in the last decade has been highly uneven. Adjacent figures show clear underperformance of the sector vis-à-vis overall GDP. Dwindling farm size has created additional pressure on land. Small and marginal farms (< 2.0 hectare) comprised around 41 per cent of all land holdings in 2005-06, up from 39 per cent in 2000-01; average land holding size has fallen to just 1.23 hectares. Add to this, the stagnant productivity and issues in input management, and we have a sector in need of major policy interventions.

Crush the value chain

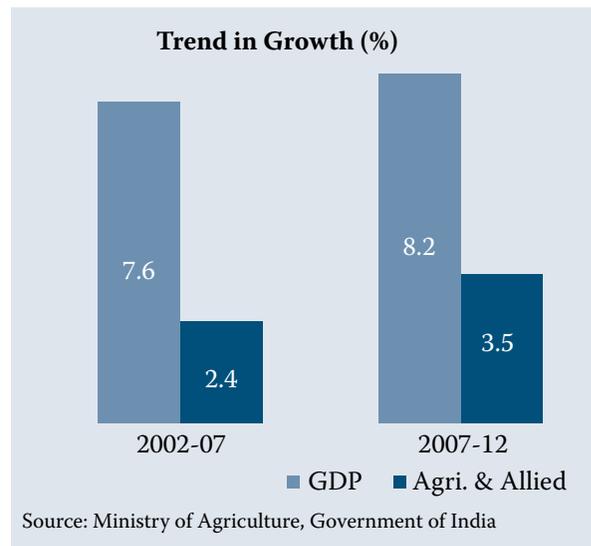
'Farm to fork' chain is exceptionally long in India. Farm harvest passes through not less than four hands before it lands in end consumer's basket.

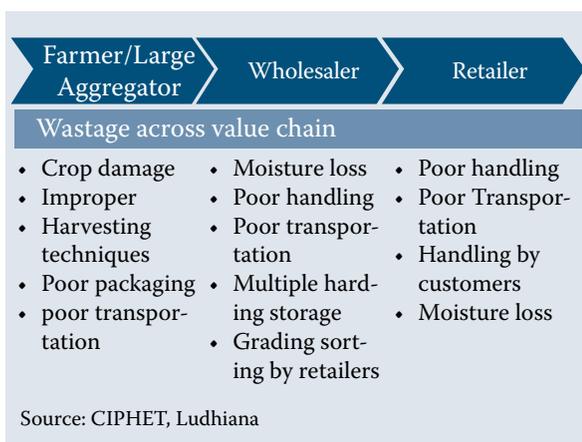
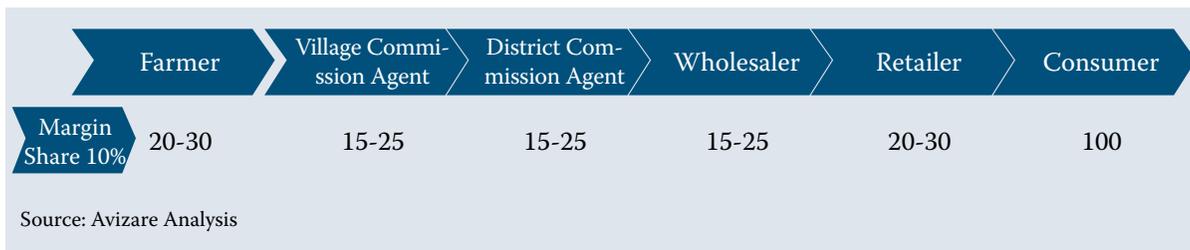
Local agents don't even have the storage capacity or the capability to process the commodity, for any value addition. They do not distinguish on the basis of grade or quality of produce but profit mainly based

With 1.21 billion "mouths to feed", not surprisingly, Indian food market is huge and bulging. It is slated to top \$600 billion over the next five years. Food occupies 44 per cent of urban India's wallet share. The country is the leading producer of agriculture commodities in the world.

For instance:

1. India is the world's second largest producer of cereals and pulses (245 million tonnes)
2. It is also the 2nd largest producer of fruits and vegetables (221 million tonnes)
3. Further, it ranks top in milk produce (100 million tonnes)
4. It ranked 5th in egg production and 18th in broiler produce





on opportunity. The problem is particularly acute in perishables like fruits and vegetables, which leads to high post-harvest wastage.

Incidentally, the only value addition that happens at some of these stages is padding up of margins. Growers have limited access to real time information including market prices and lack modern risk

management expertise. Holding capacity of growers being limited, their bargaining power vis-à-vis the plethora of intermediaries is weak and they have to take the prices as given, unlike cereals where minimum prices are virtually guaranteed.

Conflicting numbers have been put forward on the post-harvest wastage of horticulture produce, but the most authoritative number comes from Central Institute for Post Harvest Engineering and Technology (CIPHET). As per the institute’s study, these losses vary from 5-18 per cent for different horticulture crops. The wastage happens at all the stages of value chain as per the CIPHET study. These findings are supplemented by another set of numbers on current cold storage capacity, which is highly inadequate and meets only 40 per cent of the demand. Only about 6000 reefer trucks are in operation as of now.

From the perspective of buyer, especially processing and marketing firms, any slack in the supply chain means higher costs, uncertainty of supply and poor quality.

BhartiWal-Mart – Partnering for sustained growth

Investing in local growers to help them improve quality and productivity, and bypassing the vested interests in the entrenched and archaic marketing structure will define the success of any modern day retailer.

Bharti Wal-Mart started with only 65 growers in the state of Punjab. Through technical interventions like soil testing, variety selection, nursery management, fertilizer and pesticide application, integrated pest management and post-harvest management, it today connects with over 7,000 small and marginal growers across seven states, through its program of Direct Farming. Wal-Mart works with growers who are respected locally and in turn can convince others, within their sphere of influence, to work for the retailer. These growers are open to modern irrigation, have higher yields and are capable of crop rotation.

Demonstration farms are used to train the growers. Bharti Wal-Mart aims to sustainably enhance the income of the small and marginal fruit and vegetable growers, including women, through robust backward and forward integration. It claims to pay growers a premium of at least 3 percent above the market price for better quality produce. It has tie-ups with logistics companies to send fresh produce to store by refrigerated truck to its *Best Price* wholesale stores.

Bharti Wal-Mart aims to source 50 per cent requirement of fresh produce directly from over 35,000 growers in India by 2015, is committed to improve growers’ income by 20 per cent and reduce supply chain waste by 5 per cent by that time.

Source: Company website

Potato Agronomy

McCain is a global frozen food company with annual sales of \$6 bn. Frozen food variety ranges from prepared meals to appetizers like French fries, potato specialties, appetizers, pizzas, vegetables, ready meals and desserts. In India, where it entered in 1998, the focus is on snacks. With potato being the major ingredient in its products, McCain has focused on the potato agronomy that involves growing 'process-quality' potatoes, contract farming and potato storage. It has partnered with growers in Gujarat towards enhanced seed quality, irrigation systems, new planting technique, fertilizer and pesticide application and storage. McCain India claims to have improved the yields from one acre of land once averaging one to 10 tonnes of potatoes to 15 tonnes now. Further, it has helped reduce the growers' expenditure by 35 per cent and increase income by 104 per cent. Today more than 1200 growers in Gujarat are cultivating potatoes in over 3500 acres of land. It has introduced potatoes in non-traditional belts.

(Source: Company website)

One of the 'keys' to unlocking Indian agribusiness potential and making it globally competitive is to compress the value chain (too many intermediaries and ill-informed grower) and 'take out' the inherent inefficiencies from the supply chain— high wastage and inadequate infrastructure. Value chain can be crushed through Direct Farming; wastage can be eliminated by creating extensive backend infra, better storage and transport facilities; and growers can be educated about market trends and new practices through better extension services.

Direct Farming bridges the gap

One of the ways this can be, and is being, done is by bringing the grower and the consumer nearer through Direct Farming – which maybe in the form of contract farming or a loose arrangement between the buyer and the grower, ensuring certainty of exchange.

The biggest disruption to entrenched value chain is the entry of big foreign retailers and food processing companies. Foreign Direct Investment in multi brand retail comes with the strings attached – 50 per cent investment in backend infra (including cold chain) and 30 per cent procurement from SMEs (incidentally, this excludes fresh produce). These conditions are specifically meant to address the issues in the value chain.

6 years and Rs.450 crore – That's what it took McDonald's to set up the food supply chain even before opening its first restaurant in the country.

An efficient supply chain is one of the reasons for 30-40 per cent annual growth recorded by the company. Their multi-layered supply chain has food ingredient suppliers at two levels:

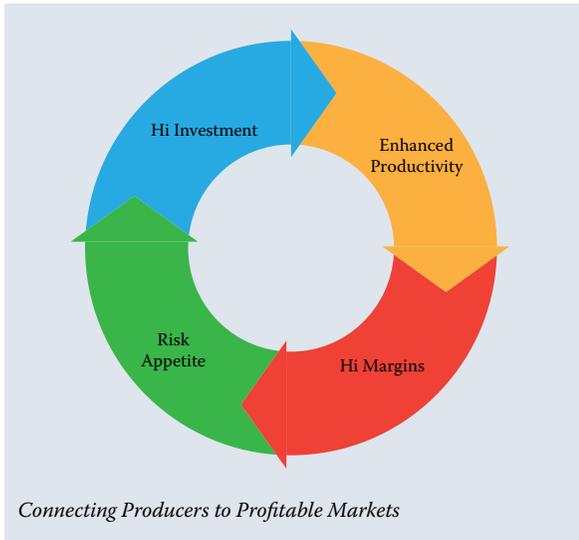
1. Tier I has core providers supplying processed products – Vegetable and chicken patties, potato

Commercial Savvy + Financial and Technical support = Rich Harvest

Belonging to a farming family, when Chandramohan decided to set up a greenhouse for horticulture production, it was an informed decision that was backed by technical expertise from the district horticulture department in Gurgaon and another grower-cum-entrepreneur. Protected cultivation multiplies yields by up to 10 times over the traditional open field production. Financial risk was shared by state and central governments in the form of subsidy for setting up the greenhouse structure, drip irrigation and saplings. The choice and timing of cucumber as the first crop has been interesting. Chandramohan, going against traditional practice, advanced the cropping cycle by a month. His first yield, though slightly lower, gave him much higher realization of Rs.24-26/kg as against the normal rates of Rs.16-18/kg during normal summer times, as he hit the market when no other seller was available. His first crop cycle yielded ~20 tonnes of cucumber and average rate of Rs.20/kg in a 4000 square meter poly-house. While he had to sell his first crop in the local wholesale market, he now has a potential tie up with a major retail chain. In future, he can avoid trips to the wholesale market as he has an assured buyer for all his produce.

Financial and technical support by government agencies and commercial savvy on part of the grower made it a 'fruitful' venture for him. With learning from the first season, he has managed to improve the yield also. He is now looking at Colored Capsicum as his second crop in the adjacent green house.

(Source: Avizare Analysis)



spoke model. The reefer trucks also handle return logistics. McDonald's' entire supply chain has been outsourced, but it has complete control over its functioning. McDonald's has partnered with McCain Foods Pvt. Ltd. and worked closely with growers in Gujarat to develop process-grade potato varieties. Please read the McCain story in Box 1.2. For other agriculture produce, they have tied up with local growers who meet strict quality norms and are able to maintain consistency of produce.

McDonald's has achieved an enviable growth through 'smart' management of supply chain and by crushing the value chain. They have been able to price their products aggressively without compromising on quality, partially at the expense of intermediaries in the value chain – as they source from farms or near-farms.

wedges, French fries and hashbrowns;

2. Tier II has growers and processors feeding lettuce and potato, poultry items and coating systems into tier I suppliers.

Processed food from tier I suppliers flows into company Distribution Centers (DCs) through reefer trucks. DCs cater to all 300 restaurants pan India. They operate as hubs for restaurants in the hub and

Corporate farming or contract farming

With Direct Farming established as a 'means' towards the 'end' that is, an efficient value chain, the question is what is more effective – corporate farming or contract farming?



Oases of growth

States, namely, Gujarat, Maharashtra, Chhattisgarh, Odisha, Andhra Pradesh and Madhya Pradesh have directed their efforts in accelerating agriculture growth and have provided the growth leadership. Away from the traditional granaries which thrived during the first green revolution, these states have emerged as the frontrunners. Investment in agriculture infrastructure – irrigation, dedicated power grid; and focus on cash crops are some of the factors driving this outperformance. The geography of outperformers will expand in next few years, on the back of a major initiative to bring about the Second Green Revolution.

Another strand of outperformance has been in specific crops – maize, groundnut, soya bean, oilseeds and cotton stand out as star performers in this decadal growth story. Cotton is the one of the biggest success stories – since the introduction of BT cotton in 2002-03. India has also emerged as the second largest producer of fruits and vegetable globally, besides being leader in several crops. The shift away from traditional cereals is also evident in growth of livestock contribution to agriculture and allied sectors. The third strand is the input side – technology has played a key role here. Innovative and efficient management of groundwater resources, improved quality of seeds, hi-tech and precision farming interventions have helped initiate a major change in the way agriculture is practised in India.

(Source: AGRINATION : The Emerging Hotspots, Avizare Solutions)

Biggest obstacle to corporate farming in India has been the land ceiling laws and the ownership of agriculture land. Few states like Maharashtra, Gujarat, Madhya Pradesh, Chhattisgarh and Karnataka have liberalized land laws allowing corporates to manage and operate large land holdings for specific purposes like bio-fuel, R&D, export, etc. There have been initiatives to use wastelands too for horticulture and bio-fuels purpose. But given that these initiatives are still in their infancy, it would be too early to take a call on their success or failure.

The argument in favour of corporate farming is its allocative efficiency, higher private investment in agriculture and resultant higher output, income and exports. Please note the same result can be attained with consolidation of land holdings in the rural hinterland – a huge institutional reform. But does this preserve the village eco-system and would the gains of increased investment benefit the villages? With big firms buying up land, corporate farming has the potential of nudging out traditional grower out of business and monopolizing on the financial eco-system of the village, where the erstwhile grower would serve either as labor hand or small time vendor.

One of the alternatives is contract farming, where the large buyers like McCain, McDonalds' or BhartiWal-Mart provide the technical and financial support - ensuring quality and consistency of the crop, and introduce modern farming practices; at the same time, contracting to buy the produce at market or other mutually agreed prices. There is evidence to suggest that contract farming besides being more widespread and sustained has the positive impacts

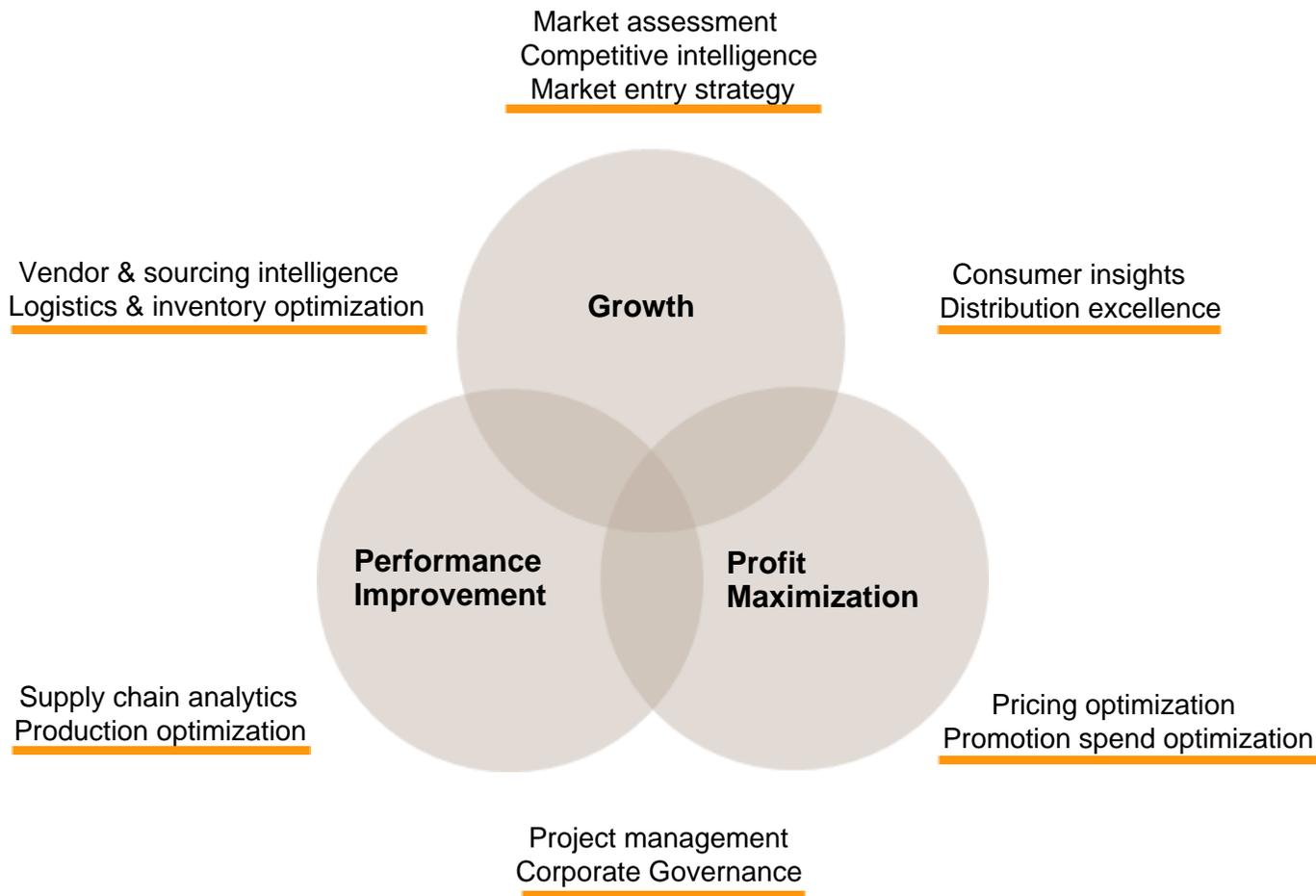
like providing profitable market access to producers, improved farm incomes, skill up-gradation due to transfer of technology, and sharing of market risk (refer to Direct Farming experiences of Bharti Wal-Mart in Box).

Experience suggests that Direct Farming creates a virtuous cycle of high investment and high productivity by linking producers with profitable markets. Besides, it adds to the risk-taking capability of the grower (see Box - Commercial Savvy.../ Chandramohan's case study). So, is Direct Farming the panacea for the ills of poor productivity, low investment and inefficient production practices? The said Box illustrates how agriculture has prospered in pockets across several states. This also shows 'the way ahead' for the sector.

To accelerate the long-term growth of the sector from 3 to 4 per cent, 'Bouquet of Initiatives' is necessary that promotes private investment, enhance productivity and provide market access to growers. Private investment would be necessary to accentuate these trends in agriculture. Some of the necessary policy steps would be consolidation of land holdings, removing market inefficiencies, increasing the 'technological absorption' capacity of growers, promoting horticulture, cash crops, allied activities and encouraging R&D activity in the sector. While private investment is necessary, it will not necessarily flow into cereals but will be concentrated into cash crops and processing. Public sector will still have to guide the less lucrative segments and create conducive policy atmosphere, in the meantime, for the entire sector. [ICAI](#)

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