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Inclusive business in practice – Case studies from the Business Innovation Facility portfolio

Evolution of mKRISHI®: A technology platform for Indian farmers

This report is one of a series of 'deep dive' case studies that seeks to understand inclusive business in practice. The series explores contrasting inclusive businesses, all of which have been supported by the Business Innovation Facility.

Foreword: An introduction from the author

Each morning during harvest season, farmers in Arapedu Village (Kanchipuram District of Tamil Nadu in South India) have their produce collected by one of five local traders in the area. They transport the produce to the nearest 'mandi' or market in Chennai, where it is sorted for quality, weighed, graded and priced by the trader. At this point, the farmer, who is sitting in the village many miles away, has no visibility into the pricing process and little choice but to accept whatever price the trader is offering. The farmer is paid once a week by the trader and charged a heavy premium for transportation services.

Dependence on middlemen is only one of many issues plaguing farmers in rural India today. Due to a lack of access to credit from banks and microfinance institutions in these areas, farmers are forced to borrow money from moneylenders and traders, thereby getting caught in a web of obligation. The mKRISHI® initiative is looking to provide farmers respite from these middlemen by reconfiguring the entire agriculture value chain. In doing so, it is also attempting to make other needed services, like consumer financing, more widely accessible. It is an ambitious and complex vision, and that is one reason it is such an interesting case study.

mKRISHI® currently has operations in the Indian states of Tamil Nadu, Maharashtra and Uttar Pradesh. Given that our fieldwork was mainly restricted to Tamil Nadu, where the mKRISHI® delivery model is being actively tested with horticulture farmers, this report captures our observations in that context as of mid 2013. It is important to note here that, as is the case with all research, there were certain limitations and biases to our data collection and analysis for this report. These have been highlighted in Annex 1.

While there are years of further investment and development ahead, looking back on the last few years of the model's development is already instructive. In this report, we examine the inclusive business (IB) in detail and attempt to understand the internal and external shapers, business model and results, both commercial and development, achieved thus far in Tamil Nadu. We hope you find it as engaging as we did.

Acknowledgements

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Author:

Padma Sethu graduated from the MBA program at Saïd Business School, University of Oxford in September 2013. Prior to that, she spent four years with Bank of America Merrill Lynch in Securities Lending as business analyst and project manager, and one year at a microfinance institution in products and strategy. She holds an undergraduate degree in Computer Science from the University of Texas at Austin.

padma.sethu@gmail.com

Contributors:

Manasi Agaskar, Business Innovation Facility, India:
manasi.agaskar@intellectap.net

Raghavendra Badaskar, Business Innovation Facility, India:
raghavendra.badaskar@intellectap.com

Editors:

Caroline Ashley, Business Innovation Facility
John Paul, Inclusive Business Consultant
Carolin Schramm, Business Innovation Facility

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Table of Acronyms

BIF	Business Innovation Facility
BoP	Base of Pyramid
CHPCL	Chennai Horticulture Produce Producer Company Ltd.
FPO	Farmer Producer Organisation
IB	Inclusive Business
IDS	Institute of Development Studies, Sussex University
IVR	Interactive Voice Response
MFIs	Microfinance Institutions
PwC	PricewaterhouseCoopers
PRIDE™	Progressive Rural Integrated Digital Enterprise
SBS	Saïd Business School, University of Oxford
TCS	Tata Consultancy Services
VLE	Village Level Entrepreneur

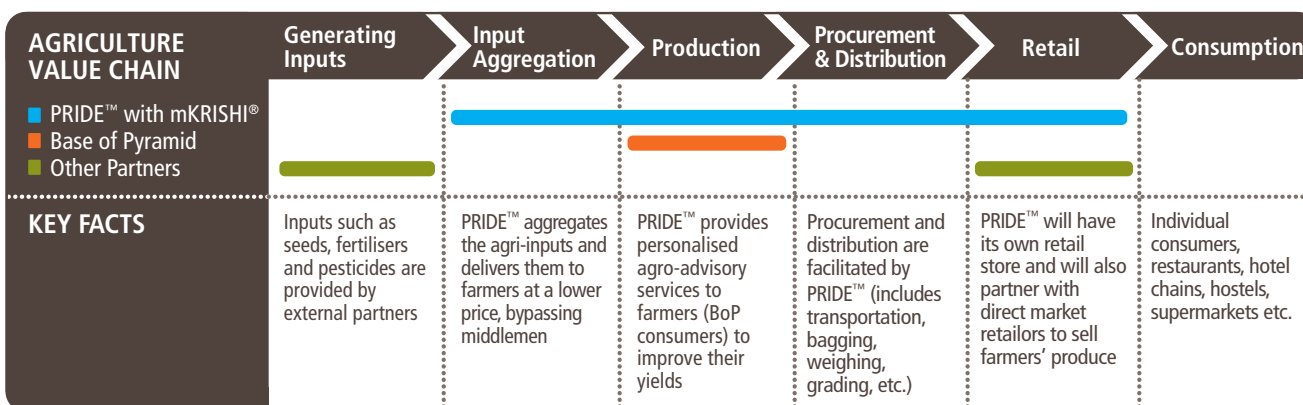
Executive summary

mKRISHI® is a technology platform designed for farmers in India. The platform uses information and communications technology (ICT) to deliver a range of services to smallholder farmers. Through their mobile phones, farmers can access advice and a growing range of personalised services. The initiative's value proposition is to increase agricultural productivity, create fair and transparent markets, and collectivise farmers to increase their bargaining power. The mKRISHI® initiative is run by Tata Consulting Services (TCS), part of the Tata Group.

Since its inception in 2006, mKRISHI® has seen considerable evolution in its product and model. Originally, it was purely an agro-advisory platform focused on providing farmers with access to information and expert recommendations on their mobile phones. Support from the Business Innovation Facility focused on finding an appropriate distribution model for the service. The newly evolved model offers a much wider range of services, targeting not just individual farmers but farmer groups, such as cooperatives and producer companies comprising smallholders. These farmer aggregation groups have access to large numbers of farmers and the required legal structure to enter into contracts with external partners. By using mKRISHI®, the organisation can make contracts for inputs and sales more efficiently, with the aim of transforming into an operationally efficient and economically viable entity. A farmer group that has the required organisational and technology support from the mKRISHI® platform is called a Progressive Rural Integrated Digital Enterprise or PRIDE™.

The combination of mKRISHI® technology and PRIDE™ organisation works across the value chain, as shown in Figure 1, and is intended to improve the entire agricultural value chain for farmers.

Figure 1: PRIDE™ with mKRISHI® value chain



The inclusive business model is one of patient and ambitious investment. Returns will be slow, but it is ultimately designed to generate profit and other strategic advantages. While the mKRISHI® product and technology has evolved over some years, the current model is still in early stages and has a long way to go before one can draw any concrete conclusions regarding its impact.

To date, TCS has invested several million dollars into the evolution of mKRISHI®. Several pilots are now running, though not yet on a full commercial basis. The revised model includes a number of revenue streams from organisations that use the mKRISHI® platform, in which modest payments by farmers are just one element. mKRISHI® expects to make losses in the next two years before making a profit in 2016. The business hopes to generate revenue of \$104-153 million (INR 6,500-9,700mn) in 2023 (Year 10 of the PRIDE™ model).

The development impact of the model will depend on the scale that is reached, which could be vast. The target is to reach around 2 million farmers in a decade. A prerequisite of reaching such scale will be a variety of farmer-oriented services successfully developed within the platform. Much like the growing number of apps that are driving smartphone sales, an increasing number of bottom of the pyramid (BoP)-oriented services will drive the adoption of the mKRISHI® platform, increasing both the breadth and depth of impact among low-income farmers.

Results from pilots to date already provide anecdotal evidence of the value of good advice to farmers, with farmers receiving advice via mKRISHI® benefiting by \$150 to \$200 in increased yield and reduced fertiliser costs. Other benefits, particularly from improved access to markets for inputs and sales, will develop as the platform expands. A widely adopted mKRISHI® platform is likely, in turn, to influence how other companies develop offerings targeted at farmers and rural consumers, and result in a considerable increase in the products and services available. These broader influences cannot yet be predicted, but may eventually be the most significant.

Figure 2: Summary of mKRISHI® impacts

mKRISHI®

Country: India

Sector: Information and Communication Technology

Product: Rural services delivery platform

BoP: Smallholder farmers



Inclusive business model:

- Provision of personalised and integrated services to farmers on their mobile phones. The service aims to enable farmers to connect to their stakeholders, access good quality agricultural inputs, find advice on farming practices, and get information on market prices, weather and other information that can help in planning and boosting yields.
- During the initial stages of the project, BIF support helped the business model development, consumer and partner research.

Commercial results:

- Project yet to generate substantial revenue and become profitable
- Investment ongoing: roughly \$5mn invested to date

Development impacts:

- Farmers are seeing improvement in yield, revenue & profits and a decrease in costs due to the agro-advisory services
- Initial benefits such as increased access to credit and subsidies seen due to cluster formation
- Launch of mHEALTH® (built on the mKRISHI® platform) demonstrates wider potential to reach BoP households

Market opportunity:

- Increase Tata presence in all areas of agriculture value chain in India
- Become the 'Google' of rural India by collecting and managing farmer and agricultural data

Future plans:

- Reach close to 1.8-2.6mn farmers in the next 10 years
- Projected to break even in 2 years, and generate revenue of \$104-153mn in 2023

Website: www.tcs.com/offerings/technology-products/mKRISHI/Pages/default.aspx

Note on figures used:

Currency: Financial figures that were provided in Indian rupee are expressed in USD, based on an exchange rate of 1 USD = 63.19 INR.

Base of Pyramid: Numbers of people reached at the base of the pyramid represent those directly engaged as suppliers, entrepreneurs or consumers, and are not multiplied by household size to represent 'lives touched'.

1 The inclusive business in brief

- > mKRISHI® is a for-profit rural services delivery platform that caters to the needs of smallholder farmers.
- > Initially providing just agro-advisory services via mobile phones, the inclusive business has since evolved to provide end-to-end support to farmers and a fuller suite of services through the PRIDE™ model.

1.1 What is the business?

Table 1: mKRISHI® Key Facts

mKRISHI® Key Facts	
Name	mKRISHI®
Sector	Agriculture and Food / ICT
Country	India
Product/ Service	mKRISHI® is a for-profit rural services delivery platform that uses information and communications technology (ICT) to cater to the needs of smallholder farmers. It connects with farmers individually to understand their needs and provide personalised services to their mobile phones. mKRISHI®'s value proposition is to increase agriculture productivity, create fair/ transparent markets and collectivise farmers.
Relationship with lead company	mKRISHI® falls under the TCS Innovation Unit of Tata Consultancy Services (TCS), a major IT services, consulting and business solutions firm in India, and one of more than 100 companies that are part of the Tata Group.
Key Definitions	<p>FPO = A Farmer Producer Organization (FPO), which is a co-operative of smallholder producers, is one type of mKRISHI® field partner. Farmers in an FPO are shareholders and they reap the benefits of any profits generated by the group. An FPO also has a rigid legal structure, which ensures that the organization and its members are protected.</p> <p>PRIDE™ = A field partner, supported by technology platform such as mKRISHI®, is called a Progressive Rural Integrated Digital Enterprise or PRIDE™ – a term coined by mKRISHI®.</p>

mKRISHI® is a patented mobile-based personalised services delivery platform that enables two-way data and information exchange between the end-users (e.g. farmers and field agents) and repositories of knowledge (e.g. virtual knowledge banks, agriculture experts and procurement officers). Currently, mKRISHI® offers a bouquet of agricultural services such as agro advisory, best practices, alert services, check weather forecast, and farm produce procurement among many others. It is not merely a technological platform, but a business solution that encompasses technology and enterprise farm management.

mKRISHI® provides value to the agribusiness ecosystem by:

- **Increasing** agriculture productivity by enabling farmers to receive important information about pesticides, fertilisers, seeds and soil/water conservation techniques
- **Creating** fair and transparent markets and improving farmer access to local markets
- **Collectivising** farmers into groups in an effort to increase their bargaining power

In order to achieve the above objectives, mKRISHI® is establishing relationships with field partners, who have access to large groups of farmers and the required legal structure to establish relationships with external organisations, such as input companies, retail chains, banks, and the government. mKRISHI® has coined the term Progressive Rural Integrated Digital Enterprise (PRIDE™) to denote rural field partners that have the required capacities such that – with mKRISHI® technology support – they can become effective and sustainable rural enterprises.

In the past, the mKRISHI® platform only offered expert agro-advisory services to individual farmers' on their mobile phones. Using voice, SMS and photo, farmers could send their queries to agro-experts sitting in a remote location. These experts reviewed the messages and provided recommendations using the same mobile platform. The advisory service has so far helped individual farmers significantly reduce costs associated with inputs, increase yield and improve quality of produce, thereby positively impacting their profit margins.



mKrishi® field officer Dinesh (right) assisting farmer Velumani (left) with a query during a visit to his farm.

“Before Tata came to our village, when there was a problem due to pest infestation, we used to take a sample of our plant to the store and ask the shopkeeper for suggestions. The shopkeeper used to recommend and push expensive products that we could barely afford. We knew we were being cheated and that something had to be done, but what could we do? We were crippled by lack of information and alternatives.”

Mathurai Veeran, farmer from Tenpakkam village

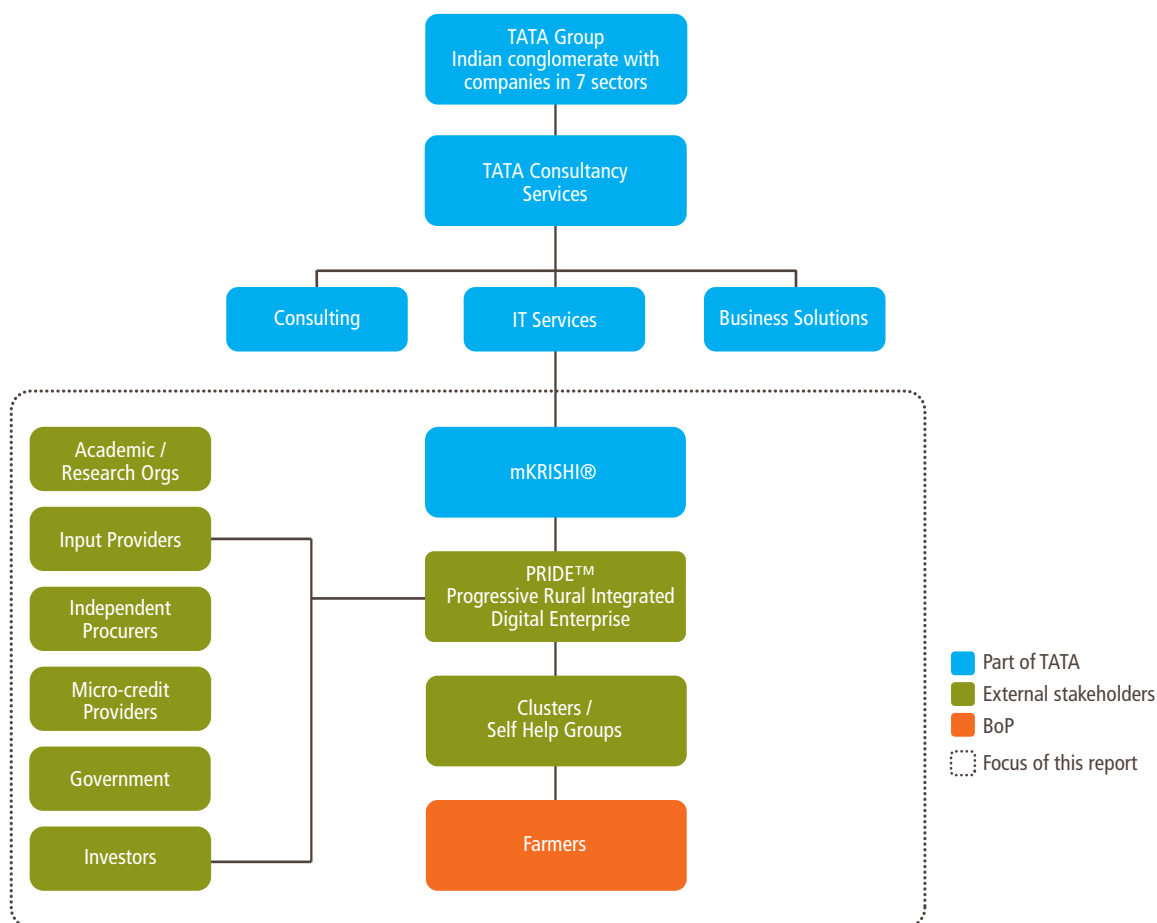
The advisory service still exists today but the PRIDE™ model goes well beyond that, looking to offer end-to-end support for farmers and provide a fuller suite of services including access to inputs, credit and markets. The company is also in the process of developing new applications to support operations of the field partner.

mKRISHI® is currently working with horticulture, fishery, dairy and sugarcane farmers in the Indian states of Tamil Nadu, Maharashtra and Uttar Pradesh,. In Tamil Nadu, the mKRISHI® field partner is an FPO called Chennai Horticulture Produce Producer Company Limited (CHPCL), and almost 1,500 of

its 5,000 members are registered mKRISHI® users. Although farmers are not being charged for these services during the current pilot, the mKRISHI® team is exploring various ways of monetising the platform. These include charging a transaction fee to input providers and retailers, advisory charges through membership, and other services such as animal husbandry and crop consultancy. mKRISHI® is considering charging the field partner for these services and securing a small cut of their margins. However, at this stage, mKRISHI®’s current focus is on establishing the required operating model and building an ecosystem for the initiative.

Figure 3 shows the boundaries of the mKRISHI® inclusive business and the focus of this case study. The inclusive business is part of Tata Consultancy Services (TCS), a large IT services and consulting firm which falls under the umbrella of the Tata Group, one of India’s biggest conglomerates comprising over 100 companies with operations in over 80 countries. Within TCS, mKRISHI® is managed under the Innovation Unit and the majority of the mKRISHI® rollouts fall under the companies’ CSR unit. Going forward, and in line with the objective of transitioning mKRISHI® into a standalone business unit, the commercialisation process is managed by the Energy Resources Business Unit.

Figure 3: Focus of this study – mKRISHI®with PRIDE™



1.2 How is the business commercial, inclusive and innovative?

How is the business commercial?

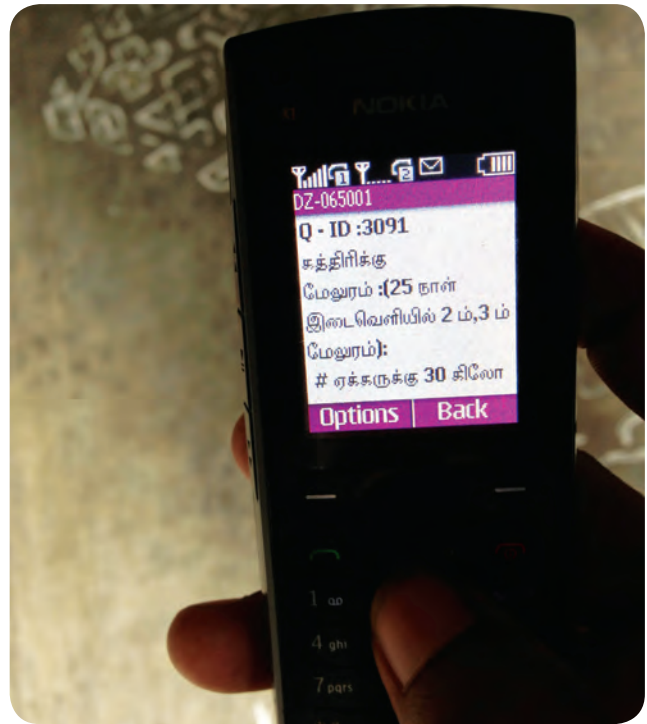
Although mKRISHI® is not currently monetised, the inclusive business is a long-term strategic investment by TCS and Tata to increase the group's presence in the agricultural value chain and also become a source of rural agricultural data. There is potential to earn revenue from multiple transactions and partners that use the platform, as well as to build upon the rural market information that will be developed.

How is the business inclusive?

mKRISHI® primarily caters to smallholder farmers in rural India. Though the mKRISHI® farmers studied for this case study had income that was over the rural poverty line for Tamil Nadu, the majority of these farmers did not have easy access to affordable inputs, credit and markets to sell produce. mKRISHI® is inclusive since it attempts to address these issues and provide end-to-end support to smallholder farmers.

How is the business innovative?

mKRISHI® is developing an innovative platform that can be easily adopted and accessed by farmers. For example, the user friendly interface allows users to send queries in their local language, and the ability to use voice and picture messages allows illiterate users to log queries (see *image 1*). The product is also evolving based on user feedback received from the field. For example, shortly after the beginning of the pilot in Tamil Nadu in March 2012, TCS realised that only 13 percent¹ of registered mKRISHI® users had handsets compatible with the mKRISHI® application, and so it developed a new mKRISHI® Lite version of the application that is compatible with all mobile handsets as it uses Interactive Voice Response (IVR) technology. A new save feature was also introduced allowing farmers to save messages offline to be sent at a later time. This helped address the loss of messages due to network connectivity issues.



Farmer Murugan's SMS query in Tamil, which is the local language

The PRIDE™ model in itself is an innovative way of delivering services to the farmers. It facilitates reconfiguration of the current agriculture value chain to remove the middlemen, and provides new channels that connect BoP farmers with companies and organisations that can serve them.

¹ Ballpark figure provided by TCS.

2 The story behind mKRISHI®

> mKRISHI® is being developed by the Tata Group, which aims to increase its presence in all areas of the agriculture value chain by linking BoP farmers with organisations that can serve them.

> The company's 'high-touch' model provides a competitive advantage in this nascent market, but also results in high operational costs.

2.1 Commercial drivers

Although mKRISHI® is not currently profitable, it enjoys strong support from Tata senior management, and TCS continues to invest heavily in its development. The inclusive business was the first of its kind within the firm, and has already paved the way for similar initiatives such as mHEALTH², which spun off from the mKRISHI® platform. Long-term, mKRISHI® serves two strategic objectives for the company:

1) Increase Tata Group's presence in all areas of the agriculture value chain:

The Tata Group currently includes companies that provide inputs to farmers, such as agrochemicals and fertilisers, as well as companies that buy farm produce for the retail market. mKRISHI® is an attempt to bridge the gap between inputs and outputs, in order to capture and increase Tata's presence in the middle portion of the agriculture value chain. In the future, these input and output companies within the Group can leverage the mKRISHI® platform to directly reach the smallholder farmer.

2) Become the Google of rural India by collecting and managing farmer data:

The mKRISHI® platform collects farmer data, including personal and family information, as well as details on assets, crop registration, and finances. This information will help improve the service provided to farmers by mKRISHI® in the short term and in the future, serve as a source of consumer marketing data for product and service companies looking to target the smallholder farmer segment.

“We want to provide a pipe to each and every rural household and essentially become the Google for the rural sector. Tomorrow we can personalise information and start renting out the pipe.”

Dr. Srinivasu P., Head of Agri Business Initiatives, TCS

The company culture within TCS is also helping to drive the business model's development. The mKRISHI® team itself is highly motivated and passionate about making a difference, and many come from the farming community and have an educational background in agriculture. They are not pressurised by TCS with any set sales targets or incentives, and this in turn has created a culture within the mKRISHI® team that is conducive to innovation, experimentation and risk taking. As a result, they have made good progress in establishing a friendly engagement with existing clients based on trust and credibility (many farmers described the mKRISHI® field officer as their “friend”), which is extremely important in this market segment.

“I worked at a number of companies before coming to TCS. I used to go from farm to farm talking to farmers and providing advice. I have to admit none of the other jobs have given me this level of satisfaction. I'm sitting in a remote location and yet touching lives in so many ways. I am not even in the field but can hear, see the situation and provide suitable recommendations. Moreover, I can service multiple requests in a day, which in the past was not physically possible. Technology has made my job really simple and so much more impactful.”

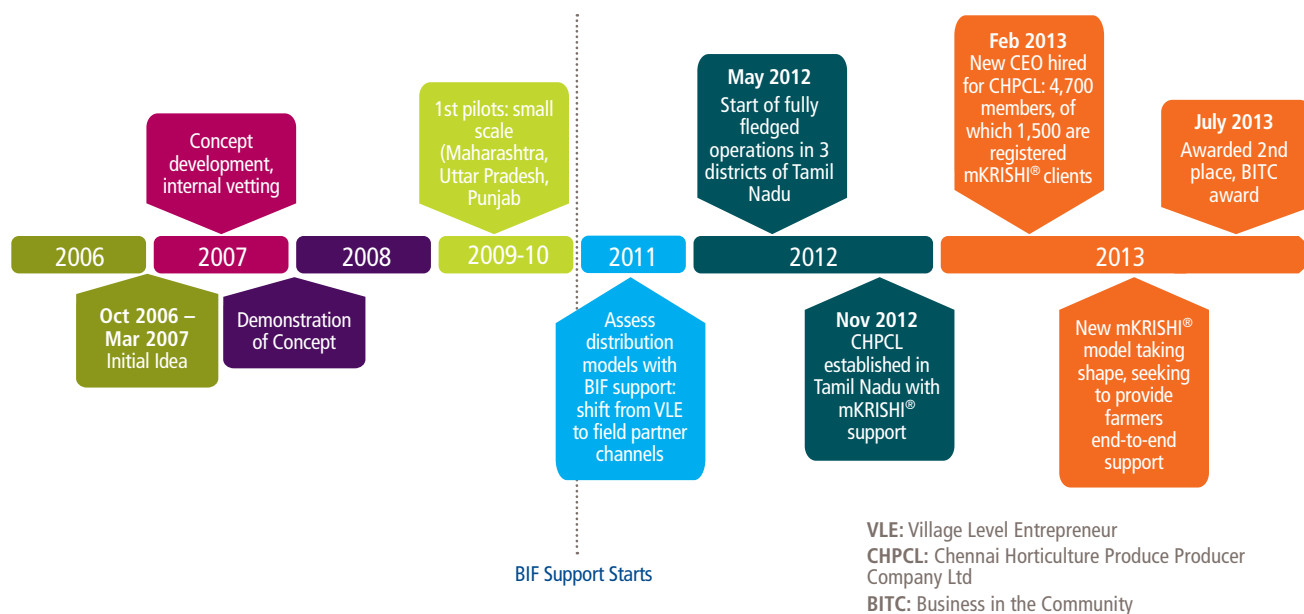
Suresh Neelakanthan, TCS Expert in Agronomics

2.2 Timeline

The mKRISHI® concept began to be developed in late 2006, and within three years the first small scale pilots were started. With support from BIF, different delivery models were evaluated before the current business model with PRIDE™ began development in 2011 and within a year was commercially launched in Tamil Nadu with the creation of CHPCL. The mKRISHI® model continues to evolve to provide more end-to-end support to the PRIDE™, which now includes nearly 5,000 smallholder farmers.

² mHEALTH®: A platform that delivers primary healthcare to villagers via their mobile phones.

Figure 4: mKRISHI® timeline of activities



2.3 Market context

Market demand

The agricultural sector is large and growing in India. According to a report published by the India Brand Equity Foundation and Aranca Research³, the GDP of Indian agriculture reached \$151.8 billion in FY12, and is growing on average 3.6 per cent annually. With the PRIDE™ model, the inclusive business is looking to address farm needs such as market access, formal credit, agro inputs, agro implements and sorting, in addition to providing information and advisory services (Section 4.2).

Competition

Current competitors include Reuters Market Lite, iKisan, Intuit Fasal and Kisan Call Centre, and organisations such as Wipro and Cognizant are also planning to enter this area. But according to Dr. Srinivasu P., Head of Agri Business Initiatives, the market for products like mKRISHI® is nascent and there is room for everyone to coexist.

mKRISHI®'s main competitive advantage is the personalised service and training it provides to farmers. mKRISHI®'s PRIDE™ model has specifically been developed to be 'high-touch', in order to increase farmer engagement and accountability. In contrast, its competitors have all opted for a 'low-touch' model. Though benefitting from lower operating costs, these models lack personal interaction, making it harder to build lasting relationships with the farmers they

serve. Various low-touch models in India have rapidly expanded sales of consumer goods with intrinsic demand, such as soap within BoP markets. But TCS believes face-to-face interactions and end-to-end support are necessary to build a sustainable market for its services. The downside is that mKRISHI®'s high-touch model could result in high operating costs as the initiative scales up, so a delicate balance between the two must be struck to ensure long-term sustainability of the business.

The value of high-touch

mKRISHI® field officers go farm-to-farm to help farmers raise queries using their mobile devices, provide training, and record feedback on the service. Clients value this level of personalisation and face-to-face human interaction with field officers and expect regular, weekly follow-ups. According to farmer Rameesan, an opinion leader in Athur Village, 'handholding' is required especially in the initial stages. Once farmers get comfortable with the technology and are able to interact with the system on their own, he believes field agents' engagement can reduce from two to three times a week to once a month. "But the human element will always need to be there", he says. "That's what differentiates mKRISHI® from other services out there."

Box 1

³ Brief on Agriculture in India, IBEF, March 2013. <http://www.ibef.org/download/Agriculture-March-220313.pdf>

Table 2: mKRISHI® competitors

Competition	Product Offer
Reuters Market Lite	<ul style="list-style-type: none"> Provides mobile-enabled information services such as market prices, agro inputs and weather information
Kisan Call Centre	<ul style="list-style-type: none"> Call centre based service to deliver information to farmers Some mKRISHI® clients use this to get a second opinion on the crop or when mKRISHI® field officer is not easily reachable
Nagarjuna Group iKisan	<ul style="list-style-type: none"> Provides web-enabled information services, as well as an “online marketplace” that allows buying and selling of agricultural commodities Dealer-centric model, reducing the risk of backlash from this segment
Intuit Fasal	<ul style="list-style-type: none"> Provides personalised market price and buyer information to farmers via SMS. Currently operational in Gujarat, AP and Karnataka (roughly 1.5mn clients)

2.4 Other India-specific factors – policy, technological, social and demographic

There are a number of other India-specific factors that could potentially impact mKRISHI®’s business model, including:

- 1) Policy context:** Given the substantial role of the agriculture sector in the Indian economy, national and state governments are constantly updating their policies with respect to this sector. For example, when the Chief Minister of Tamil Nadu introduced free soil testing, farmers rejected the same service offered for \$0.4 (INR 25)⁴ by mKRISHI® since it was now available for free. Yet, feedback from farmers has also shown that costs are not the only driver but the quality and reliability of services matters equally if not more. They expressed dissatisfaction with delays in getting results from the government sponsored soil testing and some came back to mKRISHI® for the soil testing service.
- 2) Technological trends:** Tele-density in rural India is 39 per cent for wireless, increasing at 0.65 per cent per month, and rural wireless subscribers account for 39 per cent of total subscribers.⁵ This presents a significant opportunity for mKRISHI® to expand its reach, as it primarily uses mobile phones as a mechanism to deliver service to farmers.

3) Social factors: According to the mKRISHI® team, caste system and leadership issues can often times hinder the formation of farmer groups or clusters, as farmers from one caste may refuse to work with those from another. Also, disposable income in many households is spent on alcohol consumption, family functions such as weddings and children’s education. These expenses impact how much, if any, a farmer can afford to spend on services such as mKRISHI®.

4) Demographic trends: Villages are seeing a large migration of young, educated men and women to urban areas in search for better job opportunities. According to one farmer from Yezhai Village (Villupuram district), “We want a better future for our children. Farmers’ life is not easy and I don’t want my children to struggle like we did.”

Table 3: Summary of influencing factors

Internal Factors	
Company strategy	<ul style="list-style-type: none"> Increase Tata’s presence in all areas of the agro value chain Vision to become the ‘Google’ of rural India for farmer/ agro data
Company leadership	<ul style="list-style-type: none"> Commitment from senior management Dedicated and experienced company staff
External Factors	
Macro-economic	<ul style="list-style-type: none"> Demographic trends, urban migration and commercialisation of farm lands may impact the landscape of the rural agro sector in the next 10-20 years Increasing tele-density in rural India grows mKRISHI®’s potential market
Evolving market opportunities	<ul style="list-style-type: none"> Growing agro sector and specific farm needs present a number of opportunities in the areas of farm management, inputs and logistics
Policy context	<ul style="list-style-type: none"> Constantly changing government policies could impact demand for mKRISHI® services

⁴ Note on exchange rate: Financial figures that were provided in Indian rupee are expressed in USD, based on an exchange rate of 1 USD = 63.19 INR

⁵ “Highlights on Telecom Subscription Data,” *Telecom Regulatory Authority of India*, January 2013. <http://www.trai.gov.in/WriteReadData/WhatsNew/Documents/PR-TSD-Jan2013.pdf>

3 How does the business model work?

- > mKRISHI®'s new business model with PRIDE™ provides services that meet farmer needs across the value chain – from input aggregation to retail.
- > Revenues are earned from membership, licensing and transactions fees, and profitability is expected by 2016.
- > The inclusive business's ability to establish required partnerships and develop a high-touch model that is financially sustainable will determine to whether or not the model is able to scale.

3.1 Evolution of the model

The mKRISHI® model has undergone significant change since its inception in 2006 as an agro information platform (Figure 5).

Figure 5: Original mKRISHI® business model



Based on experience from the initial pilot, the mKRISHI® team realised that other farmer needs such as access to credit, inputs and markets had to be met before advisory services could truly add value. As a result, the business model has recently evolved to provide farmers end-to-end support through the PRIDE™. In Tamil Nadu, TCS is supporting the development of CHPCL as a PRIDE™ partner.

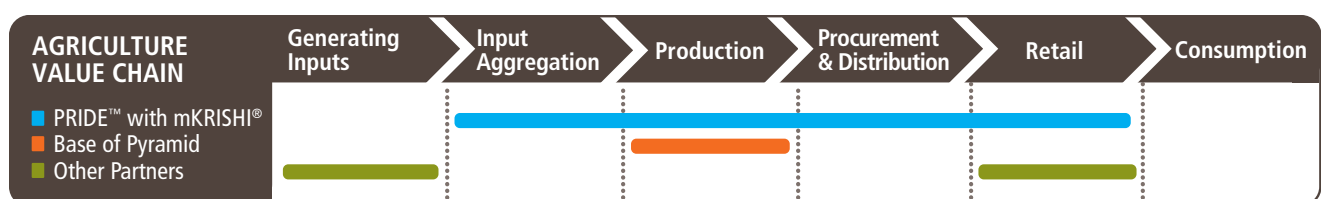
3.2 Overview of the value chain and business model

mKRISHI®'s new business model with PRIDE™ provides services that meet farmer needs across the value chain – from input aggregation to retail. The PRIDE™ facilitates these services by acting as a node on a network that connects smallholder farmers to external stakeholders, such as input providers, retail companies, agriculture experts, government, and retail banks. These partnerships are key to the success of mKRISHI®, as each meets a specific need in the value chain. Annex 3 summarises the value these partnerships provide, as well as the challenges and risks associated with each.

CHPCL is the field partner in the mKRISHI® pilot in Tamil Nadu. It was established in November 2012 with support from mKRISHI® and capital investment of \$15,825 (100,000 INR) from farmers registered as shareholders. CHPCL aims to provide the following support to member farmers:

- **Collectivising farmers:** CHPCL at present brings 4,800 horticulture farmers in the region together under the same umbrella. Organised into clusters of 16-20 members at the village level, these collectives increase the farmers' bargaining power and help them gain access to credit from banks and subsidies from the government. CHPCL currently has 111 registered clusters across 38 villages, and aims to scale to 8,500 farmers overall.

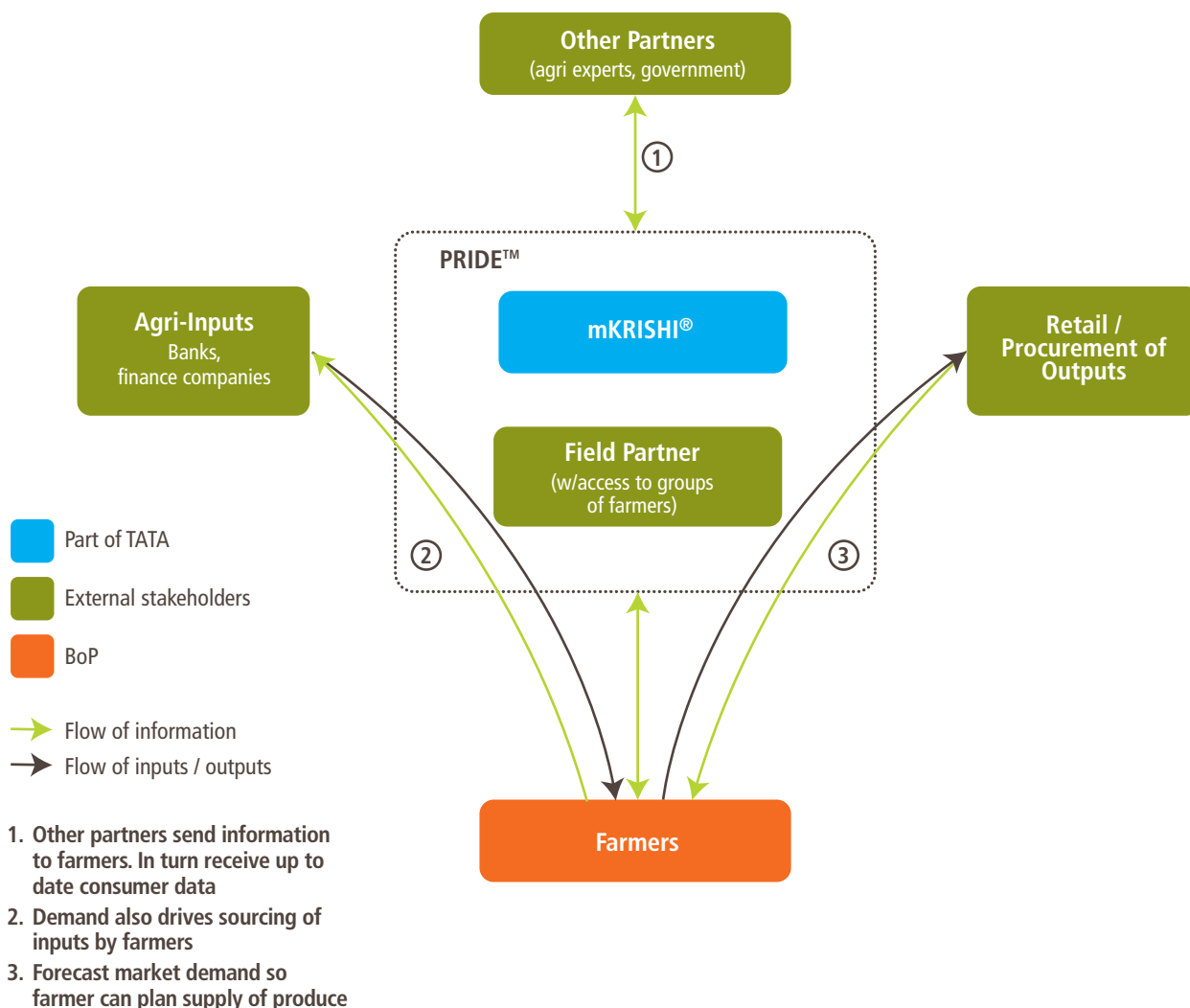
Figure 6: New agriculture value chain with the PRIDE™



- **Organising inputs:** Aggregating farmer requirements will eventually allow CHPCL to source agri-inputs in bulk directly from manufacturing companies, earning a 10 per cent margin from this transaction. CHPCL is currently in the process of putting together the framework and establishing partnerships to provide this service.
- **Marketing facilities:** CHPCL facilitates procurement and distribution of produce by providing transportation, bagging, weighing and grading services. The PRIDE™ trains farmers to understand how to reduce wastage and identify/improve the grade of their produce, which it sells to procurement agencies, retailers, or through its own local retail store.

Currently, CHPCL has established relationships with three wholesale retailers, and earns a 10 percent margin from buying and selling produce. Its current turnover is 1.5-2 tons per day with daily profit of \$16 (INR 1,000). The goal is to reach up to 50 tons per day with a daily profit margin of \$316 (INR 20,000). More details on the current state of operations in Tamil Nadu are found in Annex 2.

Figure 7: Current mKRISHI® business model with PRIDE™





Produce laid out in CHPCL retail store in Chennai

In partnering with CHPCL, mKRISHI® is able to offer additional support to its farmers by:

- 1. Providing advisory services:** mKRISHI® provides information and advice to farmers on their mobile phones. Currently, 1,490 (31 per cent) of the 4,800 farmers registered with CHPCL are users of this service on a not-for-profit basis. Between March 2012 to July 2013, roughly 2,800 queries have been logged in the mKRISHI® system. Active farmers surveyed claimed to have logged 10 queries since March 2012, and received answers within three to six hours of enquiry.
- 2. Facilitating demand-driven production:** Given the relationships established with retail stores, the field partner is in a unique position to be able to assess demand for produce in the market and advise farmers on what quantity and quality of crop they should cultivate, based on their risk profile. This in turn will drive demand for inputs, which can be sourced accordingly from input companies. In the future, the mKRISHI® platform will facilitate this “demand-driven production” by providing the required technology and allowing the FPO to identify what farmers’ risk profiles are.

Examples of mKRISHI® queries

Question: Need measures to increase more flowering in Bittergourd

Answer: Application of 2 gram ethryl in ten litre of water will enhance the growth of female flower which increases the yield of the crop.

Question: Need Control measure for Brinjal little leaf

Answer: Small brittle leaves should be taken & destroyed. After that application of monocrotophos 3ml + companion 3gm + neem gold 3ml in one litre of water should be given as spray for control.

Box 2

Demand-driven production through the mKRISHI® platform

mKRISHI® has individual farmer history and data, including personal information, and soil and crop data. This allows an FPO such as CHPCL to better manage its inventory of inputs and produce. mKRISHI® is currently developing new applications to facilitate this function, including:

- Crop Rotation, Optimisation and Planning System (CROPS™)
- Agri knowledge system or database called Agri KnoB™
- Agri Commerce System (AgriComms™)
- Disease prediction system
- Social networking site for farmers called ‘Guppa Goshti™’
- Harvest scheduling system
- Transport management system

The goal is to make these applications available on the new platform in 2014, pilot it and release it into mainstream in 2015-16.

Box 3

3. Connecting farmers with external stakeholders:

mKRISHI® will connect external stakeholders such as banks, government and other agencies to individual farmers, enabling these organisations to push information to farmers. Moreover, farmer information collected by the platform can serve as a source of consumer marketing data for product and service companies looking to target the farmer segment. This feature will come into play in the future, once the PRIDE™ is fully functional and has established the required partnerships with external entities.

The uniqueness of the CHPCL pilot

The pilot with CHPCL is a unique case because mKRISHI® has played a key role in helping to establish the organisation due to the lack of existing farmer cooperatives in the immediate area of operations. TCS continues to provide both strategic and operational support to the FPO, such as providing assistance with fieldwork (helping establish clusters, encouraging farmers to enlist with CHPCL, etc.). CHPCL provides mKRISHI® the required flexibility to experiment with the PRIDE™ model in Tamil Nadu so it can be replicated elsewhere. Going forward, however, mKRISHI® will not take responsibility for developing FPOs or other field partners. It will primarily rely on external agencies, such as state governments, National Bank for Agriculture and Rural Development, World Bank and International Fund for Agricultural Development, help establish these FPOs and provide the required working capital for FPO operations.

Box 4

3.3 Distribution channels to reach the BoP

The core competency of TCS is the provision of technology products and application services, but it lacks expertise in the agriculture sector and working with smallholder farmers. TCS has considered various options to deliver the mKRISHI® service including the Village Level Entrepreneur (VLE) model and partnership with external entities that had easy access to large groups of farmers. Indeed when mKRISHI® approached BIF for support in 2010, the technology was already tested but the question of whether a VLE model would work was a priority issue to explore for building a commercial model.

The Village Level Entrepreneur (VLE) model

A VLE is an individual selected from within a village to act as a touch point between the business and the customer. Usually a member of the target community, the role of a VLE is to sell products and services offered by companies, earning a commission on every sale they make.

Box 5

The VLE model was deemed unviable because the VLE, for most part, is a reluctant entrepreneur due to the large capital investments and risk involved on his part. TCS has since moved to establish partnerships with existing entities that have access to groups of farmers and the required infrastructure to deliver its service. The first partnership, which was established in 2011 with Grameen Suvidha Kendra MCX, ran into operational difficulties and was terminated. At present, mKRISHI® is working with FPOs in Tamil Nadu, Maharashtra and Uttar Pradesh, and attempts are being made to convert the FPOs in Maharashtra and Uttar Pradesh into PRIDE™s (similar to the pilot with CHPCL) by providing the required technology support.

BIF support in brief

In 2011, mKRISHI® became one of the first projects to receive advisory support from the Business Innovation Facility. At the time of BIF's engagement, the mKRISHI® team had conducted multiple pilots across India to test the various functionalities and streamline the product. In order to realise the vision of scaling up mKRISHI® to serve a large number of farmers over the coming years, BIF support was aimed at helping to address the constraints identified in the pilots and identify options for a commercially sustainable distribution model.

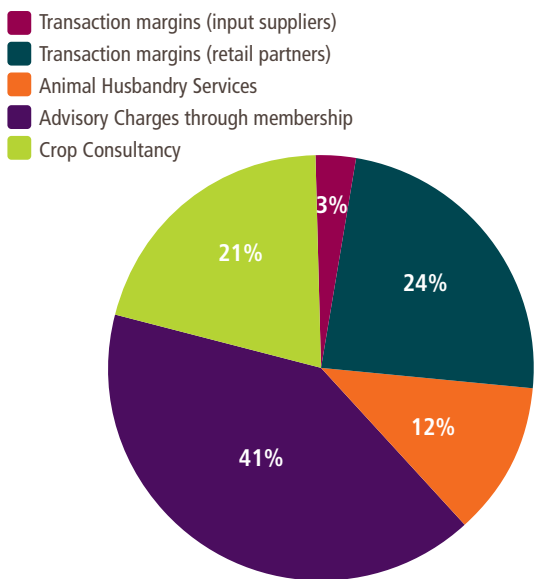
During the engagement, the BIF team evaluated various aspects of the model, such as critical needs of the target customer segments, overlap between the services offered by mKRISHI® and services demanded by farmers, and the willingness-to-pay for services. Comparable models were also assessed to draw on learnings from the successes and failures of the other initiatives. The team developed three models for commercial launch and evaluated the financial feasibility of each. A partnership model working with village level entrepreneurs (VLEs) and other ecosystem partners was recommended in which mKRISHI® would provide a mobile platform to other corporate entities to plug-n-operate in the rural markets. Various potential partners were evaluated and the partnership with MCX's Gramin Suvidha Kendra initiative was facilitated.

Box 6

3.4 Margins and other fees

In projections for the next 10 years, TCS has identified five main revenue sources for the inclusive business. mKRISHI® is considering charging the PRIDE™ for these services (through licensing and transaction fees) and various informal surveys have been done which show that the farmers are willing to pay. In other regions, farmers are already paying in the range of \$1.58 to \$9.50 (Rs. 100 to Rs. 600) per farmer per season depending on the services being offered.

Figure 8: Sources of revenue (indicative)



mKRISHI® may also look to charge external service providers for access to smallholder farmers and farmer data, but this is yet to be decided. Sharing of farmer data may cause privacy concerns, and there will be a number of requirements to adhere to relevant data security and protection laws in India.

3.5. Key success factors and potential business risk

There is an opportunity for mKRISHI® to establish itself as a leader in the rural service delivery space if the PRIDE™ model succeeds. The inclusive business’s ability to establish required partnerships and develop a high-touch model that is financially sustainable will determine whether or not the model is able to scale. mKRISHI® has a number of strengths it is able to leverage to reach this goal (Table 4), but as with many business models, it also faces both some internal and external challenges and risks (Table 5).

Table 4: mKRISHI® strengths

Strengths	Details
Ability to leverage the Tata brand and support of sister companies within the Tata Group	The Tata brand is very strong and inspires trust, even in rural areas. Moreover, there are opportunities to establish partnerships with input and output companies within the larger Tata Group.
Passion and dedication of mKRISHI® staff	mKRISHI® field officers have been able to establish trust and build their reputations. At present, there seems to be enthusiasm and positivity amongst officers and clients alike with regards to the success of the initiative.
Support of Tata and TCS senior management	The Tata management team is adopting the right approach and attitude by treating this business as a strategic, long-term investment and not putting any unnecessary short-term performance pressures on the team.
Nascent market opportunity	The market is still relatively nascent, and though there are competitors offering products and services similar to mKRISHI®, no single model has emerged as a dominant design.

Table 5: mKRISHI® challenges and risks

Type	Challenges and risks	Approach to mitigation
Internal	Securing funding for PRIDE™: CHPCL is currently operating on a capital investment of \$15,825 (INR 1 million) from shareholder farmers, and until it achieves sustainability, the FPO will need capital to cover operating costs.	Work with the government and banks to identify sources of funding, including priority sector lending.
	Farmers’ willingness to change: It is essential to build trust within farmer communities and demonstrate the value of the mKRISHI® service in order to increase uptake.	Build trust through sustained outreach to farmers and community leaders aimed at raising awareness, providing training on the use the technology, and showing the value of product by demonstrating tangible results.
	Backlash from existing dealers: Middlemen are being left out of the value chain in the new PRIDE™ model, and may try to compete with mKRISHI® by lowering their rates or using their long standing influence in the community.	Engage existing dealers by offering them a different stake in the value chain.
External	Weather conditions and water shortage: Environmental factors may impact farmer yields, as well as PRIDE™ and mKRISHI® margins.	Develop a robust risk management to better manage supply and demand of produce.
	Government policy changes: National and state governments are constantly bringing new policies that affect the agribusiness sector.	Work with governments to develop more appropriate policies that take into account ground level realities.
	Social issues: Social issues, such as the caste system, can hinder group/ cluster formation.	Recruit neutral opinion leaders from community to work with farmers in these areas.

4 Commercial results

> TCS has invested around \$5 million in mKRISHI® since its inception in 2006.

> TCS expects to start making a profit in 2016, and hopes to generate revenue of \$104-153 million in 2023.

“Ultimately, TCS is looking for a return on investment on the mKRISHI® project, but at this point our priority is to develop the foundation and not burden the PRIDE™s with what they cannot afford to pay. We are willing to wait.”

Dr. Srinivasu P., Head of Agri Business Initiatives

mKRISHI® is an ambitious project by the Tata Group in a very nascent market. TCS has invested around \$5 million (including staff time) into this project since its inception in 2006 and continues to do so as the platform is developed and the delivery model is field-tested. mKRISHI® is currently not generating any significant revenue. In Maharashtra and Uttar Pradesh, farmers pay \$1.58 (INR 100) each season, while in Gujarat, Noble Cotton⁶ is paying \$12 per month on behalf of its farmers. Farmers in Tamil Nadu are currently not being charged for service as TCS builds out the model. Going forward, the inclusive business expects the following commercial results:

- In the next 18 months, mKRISHI® hopes to sign up roughly 200 field partners and convert them into PRIDE™s. The team is looking to rapidly scale up the operations to hit 2,000 PRIDE™s by 2018. At the time of writing this report, two state governments (UP and TN) have expressed commitments to support the set-up of 100 PRIDE™s in each state.
- TCS currently has roughly 25 staff members and six contractors/field agents working on mKRISHI®. By the end of 2013, TCS hopes to ramp up to 55 employees and 20 field agents.
- mKRISHI® expects to make losses in the next two years before making a profit in 2016. The project hopes to generate revenue of \$104-153 million (INR 6,500-9,700 million) in 2023 (Year 10 of the PRIDE™ model).

Table 6: Summary of commercial results

Commercial returns	Financial	Strategic
Company objective	<ul style="list-style-type: none"> • Generate revenue of roughly \$100-150mn (INR 6,500-9,700mn) in 2023 (projection) 	<ul style="list-style-type: none"> • Increase Tata Group's presence in the agro value chain • Become the 'Google' of rural India by collecting/managing farmer data
Progress to date	<ul style="list-style-type: none"> • Total investment of roughly \$5mn, and continued investment in development of the platform • TCS expects to make losses in the next two years 	<ul style="list-style-type: none"> • The R&D lab is working on building out a larger suite of applications • Competition has entered the market
Trajectory going forward	<ul style="list-style-type: none"> • Start monetising the platform and hit revenue of roughly \$45mn (~INR 2,820mn) in 2018 	<ul style="list-style-type: none"> • Increase the scale of its network of partners and its offerings to farmers
Key challenges	<ul style="list-style-type: none"> • Building a business model that is financially sustainable at scale 	<ul style="list-style-type: none"> • Building external partnerships to increase mKRISHI®'s footprint

⁶ Noble Group corporate website, 2013. <http://www.thisisnoble.com>

5 Development impacts

> TCS hopes to reach up to 2.6 million BoP farmers in the next 10 years.

> Benefits to this population include increased yields and margins, and expanded access to valuable products and services.

5.1 Direct impacts at the base of the pyramid

mKRISHI® caters to male BoP farmers growing horticulture crops on small landholdings (1.5-2 acres). mKRISHI® does not currently have any female clients as women are generally only involved in harvesting and picking activities. According to the data published by the India Planning Commission, 21.2 per cent of persons in rural Tamil Nadu were below the poverty level in 2010, though the state-specific rural poverty line of \$10 (INR 639) per month⁷ is well below the international poverty line of \$1 per person per day. Income, however, is only one parameter for measuring poverty and identifying the base of pyramid.⁸ According to the World Bank

Study 'Voices of the Poor', the BoP are better defined by their lack of access to basic goods, services and economic opportunities. TCS increases farmer access to needed information, goods and services that improve their livelihoods, and which were previously costly or unavailable.

TCS hopes to reach an estimated 1.8-2.6 million farmers across India in the next 10 years. Though it is still too early to measure any concrete evidence of impact, there are noted benefits that have resulted from agro advisory services and cluster formation. Table 7 outlines the various beneficiaries and corresponding benefits, specifically with regards to the CHPCL in Tamil Nadu.

Table 7: Development impacts

Stakeholders	Expected impact	Indicative impact based on fieldwork
Farmers (BoP consumers)	Increase in yield and revenue and decrease in costs	Farmers are seeing benefits from using the advisory services, as evidenced by anecdotes/success stories (Box 7).
	Empowerment of farmers in groups and clusters	Initial benefits such as increased access to credit and subsidies seen as a result of cluster formation (Box 8).
	Improved access to markets and marketing facilities	CHPCL is currently providing marketing services to farmers at a very small scale (1.5-2 tons per day), though benefits have not been documented.
Local Community	Employment generation for people in the local community	Currently six field officers from the local community are employed on a contract basis by mKRISHI®. This number is expected to grow to 20 by the end of 2013 and continue to increase thereafter.
	Reduced negative impact on environment due to better use of inputs and soil conservation techniques	Whenever possible mKRISHI® recommends to farmers natural and organic inputs that are environmentally friendly. However, the impact of environmental benefits will only be seen in the medium to long term.
Traders or dealers	Middlemen will lose revenues, as their functions are taken over by the PRIDE™	The mKRISHI® field officers mentioned that some shopkeepers providing inputs to farmers had started to shun them upon realising the impact mKRISHI® was having on their sales margins.
Product and service companies	The PRIDE™ model provides companies with data on farmers and a platform to reach them	In the future, companies may increase their delivery of products and services to farmers, including non-agri (e.g. education and health). CHPCL is currently in the process of establishing partnerships with relevant companies to create this value.

⁷ Tendulkar Methodology, *Planning Commission of India*, 2011. http://planningcommission.nic.in/data/datatable/2504/databook_70.pdf

⁸ "Defining the Base of the Pyramid," IFC, 2013. http://www.ifc.org/wps/wcm/connect/as_ext_content/what+we+do/inclusive+business/news+and+highlights/defining+the+base+of+the+pyramid

Financial impact for farmers

Madhavan's story

Madhavan is a progressive farmer from Sirukaranai Village in Kanchipuram district, who grows paddy, eggplant, okra and groundnut on 12 acres of land owned jointly by him and his family members. He uses 1.5 acres to cultivate vegetables. According to Madhavan, a lack of both labor and financing for farming activities are the two major problems faced by him.

In the past, Madhavan used to spray pesticides on his okra six times, as recommended by the local shopkeeper. Based on the advice of an mKRISHI® expert, he switched to a different brand/composition of pesticide which cost 50 per cent less and required only four sprays. Following this advice, Madhavan saw a 15 per cent increase in yield.

Estimated financial benefit:⁹

- Total increase in yield = 504 Kg or 15 per cent
- Total decrease in cost = \$89 (INR 5,600) or 19 per cent
- Total increase in profits = \$208 (INR 13,160) or 88 per cent



Farmer Madhavan using his phone to make an mKRISHI® query



Farmer Dayalan with bananas from his farm

Dayalan's story

Farmer Dayalan hails from Arapedu Village in Kanchipuram district of Tamil Nadu. He has three children (in Grades 3, 7 and 8 respectively). Dayalan cultivates groundnut, paddy and vegetables on 3 acres (4.9ha) of farmland. He has been an mKRISHI® client since it first started operations in the area in March 2012. Transportation of crops to the market and securing a fair price are currently his biggest challenges.

In the past, Dayalan went to the local store to buy pesticides and fertilisers for his okra crop. The shopkeeper used to push expensive brands of pesticides and fertilisers but, due to lack of information and alternatives, he had no option but to pay. After seeking advice from an mKRISHI® expert, Dayalan changed his brands, reducing his expenses significantly.

Estimated financial benefit:⁹

- Total decrease in cost: \$150 (INR 9,500) or 26 per cent
- Total increase in profits: \$150 (INR 9,500) or 164 per cent

Box 7

Empowerment of farmers in PRIDE™ clusters

In Yezhai village (Villupuram district) farmers have come together to form clusters of 20 farmers. Each member of the cluster saves \$1.66 (INR 105) per month with the local State Bank of India branch. These savings allow farmers to secure government subsidies on machinery and inputs. For instance, seven group members got subsidised inputs from the government and another 12 members received subsidies to buy farm machinery. The group formation was facilitated by mKRISHI®, which is helping CHPCL with field operations.

Box 8

⁹ Estimate for 0.5 acres over a four-month growing season. See Annex 4 for details.

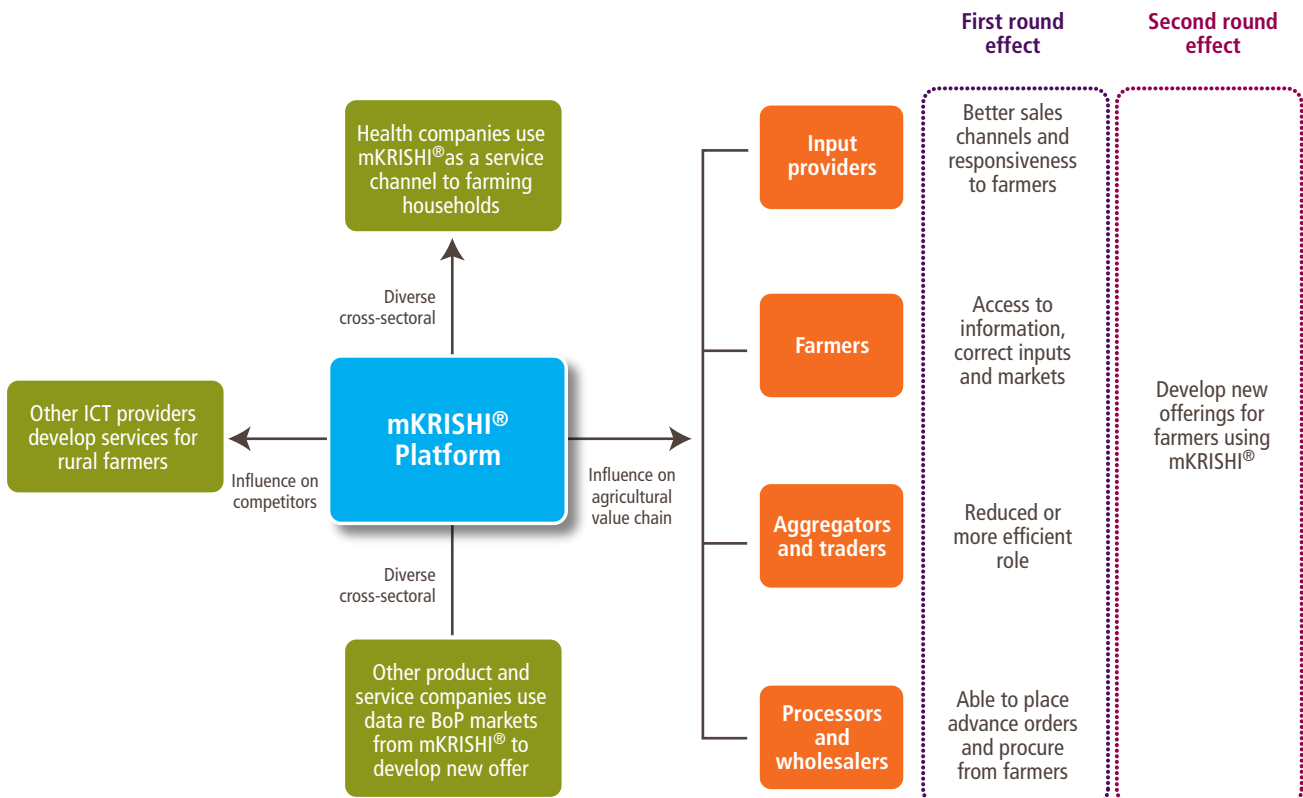
5.2 Potential for systemic impacts

The mKRISHI® model has potential for systemic impacts, meaning impacts that are not just directly amongst low-income users, but knock-on impacts in the wider market. Copycat replication of the model by others is not particularly likely, given the investment and economies of scale involved. But once the platform is widely adopted, it is likely to influence how many other companies and organisations interact with rural households.

A range of companies, including those that have nothing to do with agriculture (e.g. financial, education, health, etc.), will find they have an easier channel to reach rural consumers. mKRISHI® has already paved way for another initiative within TCS called mHEALTH® which is built on the mKRISHI® platform, demonstrating its usefulness beyond the agri sector.

As Figure 9 shows, its biggest influence will be on the agricultural value chain. The immediate results should be to drive efficiencies in how farmers interact with input suppliers and processors. The second-round affect should be that such companies start developing new products, services and incentives for the rural farmer, with whom they suddenly have an entirely new channel of engagement. The third-round affect could be beyond the agriculture sector where, for example, health companies can use the market data and ICT channel of mKRISHI® to increase their engagement with this segment.

Figure 9: Potential for mKRISHI® to catalyse changes in business behaviour of others



6 Future outlook and lessons learned

6.1 Future outlook and potential for scale

The mKRISHI® with PRIDE™ model has the potential to significantly increase efficiency in the agricultural value chain, and open up new information and distribution channels between rural BoP markets and companies and organisations that can serve them. mKRISHI®'s success in making the model sustainable will depend on its ability to:

- engage with field partners and convert them to PRIDE™s at scale
- extend the service to other crops (such as paddy and wheat) and agricultural sectors
- establish key partnerships that provide valuable products and services to BoP households via the PRIDE™
- prevent potential backlash from middlemen cut out of the value chain under PRIDE™ model.

6.2 Additionality of BIF support

BIF supported TCS in developing a new business model for mKRISHI® that was more able to quickly scale. Through the partnership, BIF consultants:

- developed a commercial operating model and identified key success factors for the model
- evaluated nuances such as critical needs of target customer segments
- assessed competition and comparable models
- evaluated potential partners for mKRISHI® and connected TCS with GSK MCX.

The BIF Team provided this support to mKRISHI® under the guidance of Dr. Arun Pande. After a transition in management, mKRISHI® came under Dr. Srinivasu P., who is now the Head of Agri Business Initiatives within TCS. Dr. Srinivasu P. and his team went ahead with the implementation of the PRIDE™ model, unaware of the operating models proposed by BIF. It turns out, however, that the PRIDE™ model is actually a combination of two different models originally proposed by BIF consultants.

6.3 Lessons learned

Lessons learned from the mKRISHI® project can prove valuable to other organisations looking to engage in similar inclusive businesses targeting rural, smallholder farmers. These include:

- **Focus on the long term:** mKRISHI®'s business model and value proposition have undergone significant changes as TCS has begun to identify what works and what does not. This iterative innovation is only possible because the management team is patient and has prioritised building an ecosystem for the long term over short-term financial results.
- **Identify ways to mitigate external risks:** External risks, such as socio-economic, cultural and environmental issues cannot be controlled. However, one can account for and identify ways to mitigate them. In the case of mKRISHI®, the team realised that caste differences were hindering farmer cluster formation. In order to mitigate this risk, mKRISHI® identified opinion leaders in the community to work with farmers and help iron out these issues through counselling.
- **BoP customers value personalisation and human interaction:** Anecdotal feedback gathered from farmers indicates that they greatly valued the personalisation and face-to-face interaction with mKRISHI® field officers, providing the inclusive business with a sharp competitive edge. It may be essential for companies serving this market segment to use such high-touch models, while at the same time identifying ways to keep operating expenses to a minimum.
- **Establish partnerships with organizations that have complementary competencies:** TCS's core competency is in the IT space, not in reaching the BoP. Partnerships with organisations that bring complementary competencies to the value chain ensure that limits in company capacity do not limit the scope of the business model.
- **Have strong strategic leadership and implementation team:** mKRISHI®'s dedicated management team and staff are proving to be strong internal drivers for the initiative. The commercial staff and field officers have educational backgrounds in agriculture, and many of them come from farming communities and are eager to give back. Entrepreneurial initiatives, even within large companies, require teams who have a passion for the work and are propelled by a sense of ownership over its outcomes.

Annex 1: Case study methodology

Overview

The case studies were conducted using both primary and secondary data.

Primary data was collected via discussion with stakeholders and beneficiaries during five days of fieldwork conducted between 17 July and 2 August. Specifically, a combination of focus groups and one-on-one interviews were conducted with a total of 20 farmers (19 of whom were registered mKRISHI® clients and one non-client). We met with the CHPCL management team and visited its retail store. Finally, we interviewed mKRISHI®, both the management team and field staff.

Secondary data included BIF baseline reports, progress report, Intellectap documents, and other external sources such as World Bank, IFC, Planning Commission of India, Tata Chemicals, India Brand Equity Foundation and Aranca Research. This desk research was conducted before, during and after the field visit (i.e. in June and July 2013).

Strengths of this case study

- Listening to stakeholders first hand
- Well-facilitated and well-planned field visit by TCS team
- Willingness of the TCS management team and field staff to spend time with us during the case study process; they were very forthcoming and easy to work with.

Limitations of this case study

- mKRISHI® has operations outside of Tamil Nadu, albeit on a small scale. Our fieldwork was restricted to Tamil Nadu, and it is hard to generalise the findings across India given the social, cultural, economic and political differences between different parts of the country
- During fieldwork, we were only able to meet with 20 farmers and get three to four success stories. This sample size is small and any conclusions we can draw from these will be indicative
- We were unable to meet with all stakeholders, especially those who are losing out in the new value chain, because mKRISHI® field officers (who were our hosts for fieldwork) were not welcome in their stores
- Respondents and farmers were chosen by the mKRISHI® team, and may not be representative of the entire customer base
- Due to the limited depths and scope of data collection undertaken for this report, the nature of BoP level data is indicative
- This case study is based on information and discussion as of mid 2013. Although discussion of specific details has continued with key stakeholders in the process of finalising this report for publication in December 2013, it should be seen as a snapshot as of mid 2013.

Annex 2: Current status of operations in Tamil Nadu

TCS mKRISHI® Platform	
Function	<ul style="list-style-type: none"> • Connects farmers within an FPO to personalised agri-advisory services through their cell phones (voice, text and photos) • Field officers go door-to-door answering farmer queries and providing training in use of technology • In the future, mKRISHI® will look to support the FPO by providing a backbone technology platform for inventory supply/demand management and trading
Key characteristics	<ul style="list-style-type: none"> • Group within the Innovation Unit within TCS, a company with one of the highest market capitalisation in India
Revenue source	<ul style="list-style-type: none"> • Currently not generating any substantial revenue.
Current status (mKRISHI® Project)	<ul style="list-style-type: none"> • mKRISHI® was commercially launched in TN in March 2012 - 1,490 farmers, 111 clusters - Operations currently in Kanchipuram (790 farmers, 18 villages) and Villupuram (700 farmers, 20 villages) - Size of operations team = 5 (including 1 expert, 2 field officers) - Innovation and R&D team based in Mumbai (~20 members) - From March 2012, roughly 2800 queries logged in system i.e. 30-40 queries per week - Majority queries are regarding pest infestation

Chennai Horticulture Produce Producer Company Ltd	
Function	<ul style="list-style-type: none"> • Procures all produce from farmers in a guaranteed fashion. Adds a margin of 10 per cent and sells produce in the market • Provides farmers access to inputs in form of seeds, fertilisers and pesticides • Provides training to farmers in bagging, grading of vegetables and reducing wastage
Key characteristics	<ul style="list-style-type: none"> • A grouping of farmer clusters, which acts as an agricultural intermediary • Established as private limited company under the Indian Companies Act (1956), giving it a legal status to enter into contracts with other parties subject to its memorandum of association • Enhanced governance standards resulting from higher degree of compliance requirements • Many states in India have well-established FPOs w/government support
Revenue source	<ul style="list-style-type: none"> • Revenue from selling inputs and produce (10 per cent margin from buying and selling inputs and produce)
Current status (mKRISHI® Project)	<ul style="list-style-type: none"> • Established on Oct 19 2012 • Five Board of Directors, all farmers • Currently have three – four procurement officers • 4,750 registered farmers (total capacity 8,500) • Working capital of 10L raised by issuing shares to farmers • Current turnover is 1.5-2 tons/day, with profit of \$16 (INR 1,000)/day (target turnover is 50 tons/day, with profit margin of INR 20,000/day) • Currently in dialogues with six procurers (two signed up) • Has established one retail store in Chennai • Yet to establish partnerships with input companies • Will take three to five years to break even

	Cluster or Self Help Group
Function	<ul style="list-style-type: none"> • Empowerment of farmers in groups by increasing their bargaining power • Facilitates access to micro-financing and government subsidies due to increase in credit-worthiness and diversification in a group
Key characteristics	<ul style="list-style-type: none"> • All clusters are registered with FPO • Group size should be between 12-20 farmers (recommended 16-20) • Each cluster has a nominated President and Secretary • Risk reduction for lenders due to diversification in group and provision of social collateral • Group is unbiased with no hidden political agenda
Revenue source	<ul style="list-style-type: none"> • Aggregation of revenue of its members
Current status (mKRISHI® Project)	<ul style="list-style-type: none"> • 111 clusters formed across 38 villages in Kanchipuram and Villupuram districts • Each village has one to three clusters

The table above represents status as of mid 2013.

Annex 3: mKRISHI® partnerships: strengths and weaknesses

The PRIDE™ model relies heavily on the field partners, and the success of mKRISHI® is closely aligned with the success of the PRIDE™. TCS has invested significantly in setting up CHPCL as a field partner. Going forward, partnerships with other independent field partners and various other external stakeholders need to be established as well. The table below summarises the value each partner adds, as well as their challenges and risks they bring that can impact the PRIDE™ model.

Partner	Role	Benefits	Challenges / Risks
Field Partner	<ul style="list-style-type: none"> Provides access to groups of farmers Has legal structure to partner with input and output companies 	<ul style="list-style-type: none"> In line with government regulations that protect the farmers Increases bargaining power of farmers 	<ul style="list-style-type: none"> Securing credit for working capital Recruiting a strong management team Keeping farmers engaged and contributing
Local Governemnt Authorities	<ul style="list-style-type: none"> Provides monetary support to setup and scale Field Partners 	<ul style="list-style-type: none"> Provides working capital (commitments to set up 200 PRIDE™s so far) 	<ul style="list-style-type: none"> Ensuring continuity of support for FPO when 'champion' leaves (Example 1)
Banks & Coop Agencies	<ul style="list-style-type: none"> Connects farmer clusters to credit and other services through linkages Banks/Agencies can leverage farmer data from mKRISHI® platform 	<ul style="list-style-type: none"> Relieves farmers from clutches of moneylenders and traders Social collateral of clusters provides security, and allows diversification 	<ul style="list-style-type: none"> Willingness of bank and local branch manager to lend to a segment that has been blacklisted in the past (Example 2)
Input Companies & Procurement Agencies	<ul style="list-style-type: none"> Input companies provide inputs in bulk Procurement agencies buy produce 	<ul style="list-style-type: none"> Helps PRIDE™ manage the supply and demand of produce, allowing for demand driven production 	<ul style="list-style-type: none"> Managing expectations of procurers and adhering to quality standards (Example 3)

Specific examples of how partnerships have influenced the development of the inclusive business include:

- 1) In Oct 2012, TCS sought support from a former government administrator to set up and run CHPCL as the CEO. However, in Dec 2012, a key government official who played a vital role in the establishment of CHPCL was transferred to a different unit and, as a result, government support for CHPCL fell through. Consequently, TCS operations had to be downsized, and pressure was put on the CEO of CHPCL to dissociate himself from the company.
- 2) In Kanchipuram and Villupuram, farmers are primarily reliant on gold loans or credit from moneylenders, input dealers and traders. The mKRISHI® team conducted a credit appraisal of 72 groups of farmers based on NABARD guidelines in hopes of securing funding for farmers from banks, and found them credit worthy. However, banks are hesitant to provide loans as these communities are blacklisted. The team is now looking at potential partnerships with cooperative societies and national/public banks, such as the State Bank of India, that are willing to lend to such groups.
- 3) Procurement companies, specifically retail stores are very particular about securing only high grade produce, and have their own quality parameters (size, colour, etc.). As such, the FPO needs to have a mechanism in place to dispose of lower grade produce that is rejected by these companies. CHPCL, for instance, gives away unsold produce at cost price to hotels and hostels at the end of each day.

Annex 4: Profitability calculations for farmers (estimate)

These calculations show the impact of mKRISHI® on smallholder farmers (Murugan and Dayalan) who grew okra on 0.5 acres for one season (four months). Their profits increased 88 per cent and 164 per cent respectively.

Data provided by mKRISHI® – Okra Crop, 0.75 acres			Calculations for 0.5 acres of land, Okra Crop				
	Details	Murugan (0.75 acres)	Murugan – baseline	Dayalan – Before mKRISHI®	Dayalan – After mKRISHI®	Madhavan – Before mKRISHI®	Madhavan – After mKRISHI®
Cost of Seed (INR)	Variable Cost (V)	3000	2000	2000	2000	2000	2000
Cost of Equipment (INR)	Fixed Cost (F)	3500	3500	3500	3500	3500	3500
Cost of Fertilizer (INR)	Variable Cost (V)	7325	4883	4000	1000	4883	4883
Cost of Pesticide (INR)	Variable Cost (V)	4500	3000	10000	3500	8400	2800
Cost of Labor (INR)	Fixed Cost (F)	10000	10000	10000	10000	10000	10000
Cost of Transport (INR)	Variable Cost (V)	6048	4032	4032	4032	4032	4032
Cost of Irrigation (INR)	Variable Cost (V)	4000	2667	2667	2667	2667	2667
Total Costs (INR) =		38373	30082	36199	26699	35482	29882
Total Costs (USD) =		607	476	573	423	562	473
Yield/picking (Kg)		180	120	125	125	120	138
Pickings/ Season (#)		28	28	28	28	28	28
Total yield (Kg)		5040	3360	3500	3500	3360	3864
Price/Kg (INR)		12	12	12	12	15	15
Revenue (INR)		60480	40320	42000	42000	50400	57960
Total Revenue (USD)		957	638	665	665	798	917
Profit (INR)		22107	10238	5801	15301	14918	28078
Total Profit (USD)		350	162	92	242	236	444
	Increase in yield				0		504
	Reduction in costs				9500		5600
	Increase in profits				9500		13160
	% reduction in costs				26		19
	% increase in profits				164		88
	Exchange Rate Used				1 INR	63.19	USD

Data From field work – Dayalan	Before mKRISHI® (INR)	After mKRISHI® (INR)
Seeds (one time)	2000	2000
Fertilizer (2 rounds)	4000	1000
Pesticides (5 rounds)	10000	3500
Yield/picking (Kg)	125	125

Data From field work – Madhavan	Before mKRISHI® (INR)	After mKRISHI® (INR)
Yield/ picking (Kg)	120	138
Cost of Pesticides (6 rounds before, 4 rounds after)	8400	2800
Price/Kg	15	15

* Labour is identified as fixed cost because farmers mentioned that they used five labourers for harvesting purposes on 0.5 acres of land

Partner profiles

Business Innovation Facility

The Business Innovation Facility supports companies as they develop and implement inclusive businesses. Inclusive business is profitable, core business activity that also expands opportunities for people at the base of the economic pyramid: either as producers, suppliers, employees, distributors, or as consumers of affordable goods and services.

The Business Innovation Facility is a pilot project funded by the UK Department for International Development (DFID). It is managed for DFID by PricewaterhouseCoopers LLP in alliance with the International Business Leaders Forum and Accenture Development Partnerships. It works in collaboration with Imani Development, Intellectap, Renaissance Consultants Ltd, The Convention on Business Integrity and Challenges Consulting.

For further information on BIF go to: www.bifprogramme.org

To join the discussion on inclusive business, go to: www.inclusivebusinesshub.org



Institute for Development Studies (IDS)

The Institute of Development Studies (IDS) is a leading global charity for research, teaching and information on international development. Our vision is a world in which poverty does not exist, social justice prevails and economic growth is focused on improving human wellbeing. We believe that research knowledge can drive the change that must happen in order for this vision to be realised. IDS hosts six dynamic research teams, several popular postgraduate courses, and a family of world-class knowledge services. These three spheres are integrated in a unique combination – as a development knowledge hub, IDS is connected into and is a convenor of networks throughout the world.

The Impact and Learning Team (ILT) conducts action research to generate new insights into the ways that evidence is used in decision making in policy and practice, including the generation of multiple types of evidence and knowledge (from evaluation, monitoring, and research), and the behaviours and capabilities of decision makers in using evidence to contribute to organisational, programme and policy changes. The ILT is situated under the Knowledge Services department of IDS, and works collaboratively with the six research teams in the institute as well as external partners.

For more information about the Impact and Learning Team, please visit:

<http://www.ids.ac.uk/team/impact-and-learning-team>

For information about IDS research on business and development, please visit:

<http://www.ids.ac.uk/idsresearch/business>



Oxford University, Saïd Business School

Saïd Business School is one of the world's leading and most entrepreneurial business schools. An integral part of the University of Oxford, the School embodies the academic rigour and forward thinking that has made Oxford a world leader in education. The School is dedicated to developing a new generation of business leaders and entrepreneurs and conducting research not only into the nature of business, but the connections between business and the wider world.

For further information please visit: <http://www.sbs.ox.ac.uk/>

Skoll Centre for Social Entrepreneurship

The Skoll Centre is a leading academic entity for the advancement of social entrepreneurship worldwide that is housed in Oxford University's Saïd Business School. The Centre fosters approaches to market-based social transformation through education, research, and collaboration among business, policy, academic and social leaders

For further information please visit: <http://www.sbs.ox.ac.uk/ideas-impact/skoll>



About this series of case studies

The definition of inclusive business is fairly well known by now – profitable, core business activity that also expands opportunities for people at the base of the economical pyramid (BoP). But what does it look like in practice? That is a harder question to answer. Experience is diverse, much of it early stage, and published reports often err on the side of ‘cuddly’, not forensic.

This report is one of a series of ‘deep dive’ case studies that seeks to understand inclusive business in practice. The series explores contrasting inclusive businesses, all of which have been supported by the Business Innovation Facility (BIF). Support from BIF is not cash, but technical input to help overcome challenges, seize momentum, and build a business model that will take the inclusive business to scale and sustainability. The partnership with BIF is, thus, very focused on the practicalities of business models and identifying key milestones in an inclusive business journey.

Over the past three and a half years, BIF has worked with almost 100 companies in five countries. BIF-supported businesses offer rich lessons about the evolution and impact of inclusive business, ranging from working with smallholder mango farmers in Malawi to rural energy solutions in India. Some of this is captured in the monitoring and evaluation (M&E) system. However, the system was designed to be applicable to all projects, not necessarily to capture the richness of the most interesting.

In order to add a deeper understanding of BIF supported inclusive business, BIF, in partnership with the Institute of Development Studies (IDS) of Sussex University and Saïd Business School (SBS) of Oxford University, has generated a set of case studies of inclusive business.

Following a joint framework developed by BIF and IDS, these reports explore what counts as success and what factors have created it. They assess the internal and external context of a company’s business model, the ‘nuts and bolts’ of how the model works, actual or likely commercial returns, emerging impacts on bottom of the pyramid beneficiaries, value added from BIF support, key success factors for scale and lessons relevant for other companies.

We hope that the reports will provide inclusive business practitioners with knowledge and insights on how companies are progressing on their inclusive business journeys – each one distinctive, yet each discovering challenges and solutions that resonate with others.

Caroline Ashley and Carolin Schramm, BIF, Elise Wach, IDS and Pamela Hartigan, SBS

The full series of case studies:

- > ACI Agribusiness: Designing and testing an integrated contract farming model in Bangladesh
- > Collaborating for smallholder finance: How is Stanbic closing the loop?
- > Commercialising cassava: New opportunities for Universal Industries and Malawian smallholders
- > Evolution of mKRISHI®: A technology platform for Indian farmers
- > iSchool: Transformative learning in the Zambian classroom
- > MEGA: A commercial approach to off-grid power in rural Malawi
- > The JITA sales network: An inclusive business on the rise



The series was coordinated by Carolin Schramm, and edited by Caroline Ashley. The methodology was developed and shared with authors in collaboration with Noshua Watson and Elise Wach of the Institute of Development Studies. Editing was done by members of the BIF team and by John Paul, independent inclusive business consultant. The series Production Manager was Clare Convey, and design was done by Caroline Holmqvist.

We are grateful to the authors, contributors and companies who have provided the images used within these case studies. Images cannot be reproduced without their permission.

→ To view all case studies, go to **The Practitioner Hub for Inclusive Business:**
www.inclusivebusinesshub.org/page/bif-case-studies



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We welcome feedback on our publications – please contact us at enquiries@inclusivebusinesshub.org