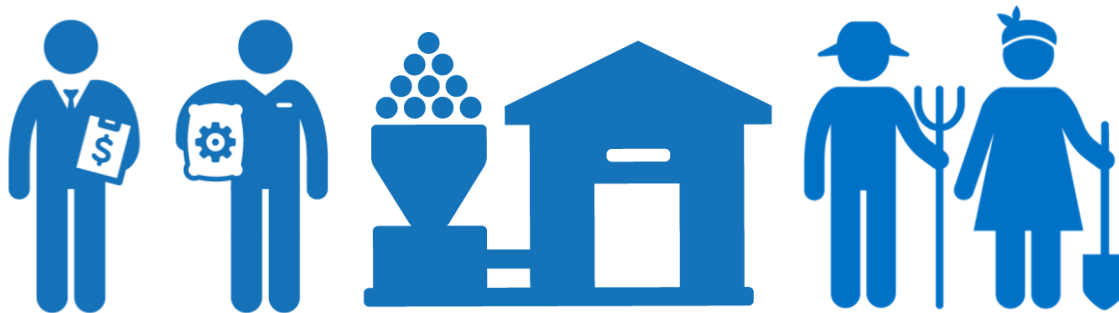


SDM: Case Report ITC Spices

Service Delivery Model assessment: Short version
June 2016

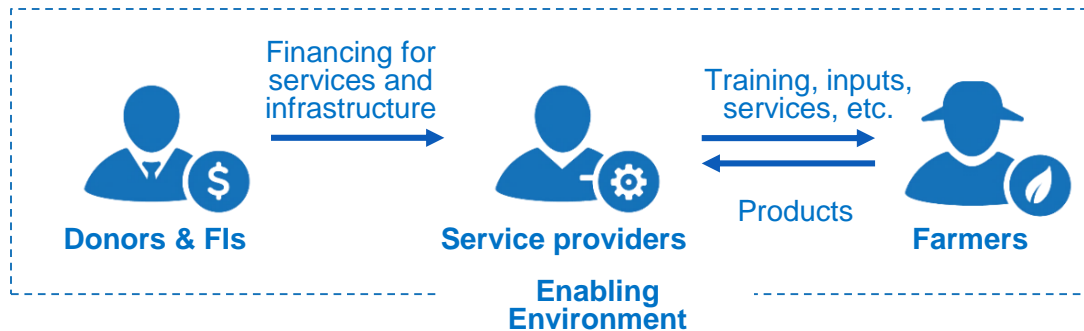
Location: India
Commodity: Chilies
Services: Training, inputs, community development, technologies and best practices



What are SDMs and why are we interested in analyzing them?

Service Delivery Models (SDMs) are supply chain structures which provide services such as training, access to inputs and finance to farmers. The aim is to improve farmers' performance, and ultimately their profitability and livelihoods.

A SDM consists of service providers, often supported by donors and financial institutions (FIs), and farmers receiving the services. All are set within a specific enabling environment.



By analyzing SDMs, we aim to support **efficient, cost-effective and economically sustainable SDMs at scale** through:

Key drivers for success of SDMs benchmarking



Innovation opportunities to support



Cross-sector learning, learning community



Convening at sector and national level



Analyzing SDMs brings a range of benefits



Farmers and farmer organizations

- **Enhanced services**, which lead to improved farmer income and resilience, through higher productivity and product quality
- **Improved SDM outcomes**, which lead to an improved social and environmental environment



SDM operator

- Better understanding of your **business case**
- Insights to **improve service delivery**
- Insights to develop a **cost-effective SDM**
- Identification of opportunities for **innovation** and **access to finance**
- **Comparison** with other public and private SDM operators operating across sectors/geographies
- Ability to communicate **stories of impact and success** at farmer level



Investors/FIs

- **Common language** to make better informed investment decisions
- Insights to achieve optimal **impact, efficiency and sustainability** with investments and partnerships in SDMs

The ITC Spices SDM and objectives

General SDM information:

Location:	India
Timing and analysis scope:	2012-2015
Scale (start of analysis):	2,000 farmers
Scale (end of analysis):	3,200 farmers
Funding:	ITC
SDM Archetype*:	Local trader / processor



ITC is one of India's foremost multi-business enterprises with a market capitalization of over US \$ 40 billion and a turnover of US \$ 8 billion. ITC Spices is currently one of the largest IPM chili growers in India.

ITC Spices, located in Guntur (AP), engages over 7,800 spice farmers across 18,500 Hectares and 210 villages, to offer customers spices that comply with the strictest food safety norms across the world.

ITC Spices aims to increase chili pepper production suitable for export. The business unit therefore implements a customized Integrated Pest Management (IPM) program in Andhra Pradesh and Karnataka, the major chili growing areas.

SDM objectives:

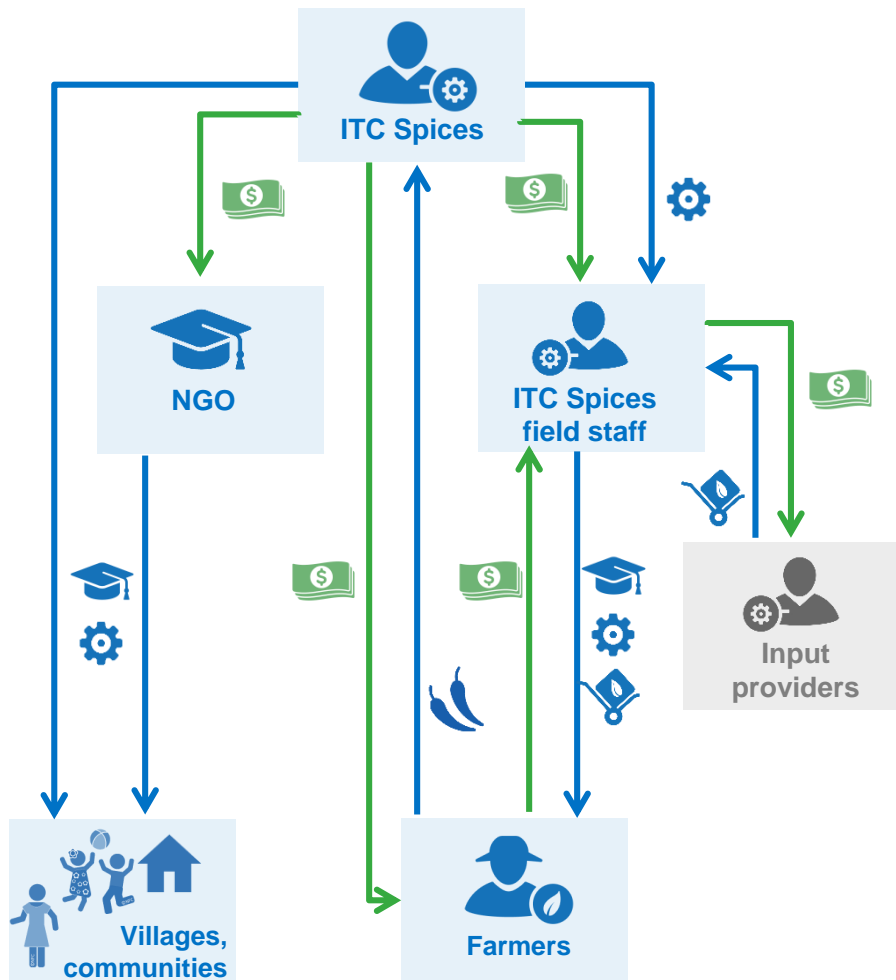
- 1 Increase the security and quality of supply**
 - Increase production suitable for export (meet international food safety requirements)
 - Increase farmers loyalty
- 2 Create a resilient business model**
 - Adapt to increasing stringent international requirements
 - Create credibility of social and environmentally sustainable practices (incl. traceability)

SDM rationale:



* For more info on SDM archetypes, see the [IDH Smallholder Engagement Report](#)

SDM structure



Legend → Flow of goods and services → Cash flow

The ITC Spices department has a specific SDM focused on chili farmers since 2008. Field staff provide services (training, inputs, technologies) to farmers in sustainability and crop development:

- Field officers (40) give farmers training and one-on-one support in the villages
- A supervisor (19) focuses on one intervention area and provides support to the field officers
- Village supervisors report to their area manager (4), located in the nearest city
- Area managers report to the head of department in Guntur

The ITC Spices team relies on its program's size and a strong vendor's network to acquire quality and well-priced inputs.

In year 1 the ITC team enters a village and starts working with farmers to ensure quality chili produce, by giving IPM training and providing access to well-priced quality inputs. Around 20 farmers are enrolled in an ICM program. When interventions are successful more farmers are included in the program the following year. Also, community development projects are initiated in year 2. The ITC Limited MSK team relies on in-house expertise for implementation and works with partner NGOs.

Services delivered and farmer segmentation



Farmer training

- The ITC Spices crop development team offers farmer training. These trainings are focused on Integrated Pest Management (IPM), a management system to comply with international standards.
- For more advanced farmers there is Integrated Crop Management (ICM) training. Newly developed best practices/technologies are communicated here.



Inputs (organic fertilizer, pesticides)

- ITC Spices offers an in-house developed organic fertilizer, Wellgrow.
- For other inputs ITC Spices taps into their extensive vendor's network.
- To facilitate the switch to new inputs, price difference with current inputs is subsidized. These subsidies decrease to 0 over 4 years.



Community development

- Through the ITC Limited Mission Sunehra Kal program (MSK) primary education, health & sanitation, and women's empowerment & gender equality interventions are implemented
- After community needs assessments, MSK staff determines what community development projects are desired in collaboration with the ITC Spices field team and farmers.



Technologies and best practices

- ITC Spices sustainability team works closely with farmers to find ways to efficiently and effectively scale-up productivity and quality of production.
- Focus is first on bringing down costs of cultivation and enhancing quality & yields, then on increasing environmentally responsible practices
- Best practices are also incentivized by taking care of the administration needed for Rainforest Alliance certification.

Service sequencing

Farmers in this SDM are not segmented, but services are delivered in a specific sequence. ITC selects villages, and introduces service delivery in the first year. If all goes well, more advanced services are delivered in the following years.

Year 1

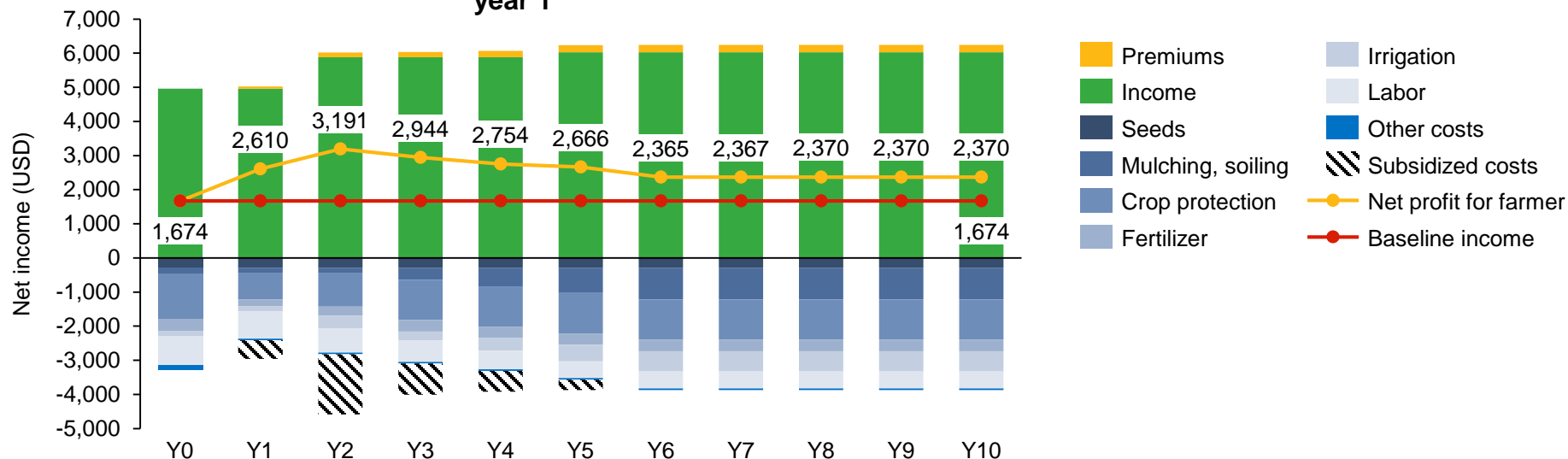
After selecting a village, all farmers are offered IPM training, and correspondingly farmers switch to IPM inputs. A pilot is set up to provide subsidized ICM inputs to 20 farmers. ITC Spices invests in local teams that work closely with the farmers in the village.

Year 2 and onwards

After complying with requirements on IPM, farmers are trained in ICM. More farmers are given access to ICM inputs. Technologies, aimed at improving village infrastructure for chili cultivation, are subsidized and implemented. When ITC Spices decides to continue in a village a community needs assessment is executed to determine the type of community development projects that are to be implemented.

Overall SDM impact: Farmer P&L

Individual farmer (1 ha) entering the program in year 1*



Economic sustainability at farm level

ITC farmer incomes improve with 42% compared to the baseline farmer. For this net income to be attained, ITC farmer invest heavily in more efficient technologies. Over time total expenses rise with 18% (Y10 vs. Y0).

Main revenue drivers

- **Yield:** farmers applying ICM see their yield increase with 13% (on average).
- **Quality:** farmers applying IPM and ICM grow chilies that meet international requirements and can be sold at export prices (IPM & ICM), receiving a premium on top (ICM). Rainforest Alliance premium is around 3.5% of total revenue: \$221 (Y10) vs. \$68 (Y0)

Main cost drivers

- **Inputs (crop protection, fertilizer, seeds):** costs are lowered for ITC farmers in year 1 and 2 to facilitate the switch to different inputs. Principally fertilizer and crop protection are subsidized (40% of \$300/ha and \$1,032/ha resp.). Comparing Y10 to Y0 costs decrease with 9%.
- **Technologies:** ITC farmers make use of more efficient technologies (drip irrigation at \$450/ha, border crop, mulching and subsoiling at \$770/ha), therefore becoming capital intensive farmers. Expenses gradually increase due to a subsidy scheme by ITC, starting at 100% of new technology costs subsidized, phasing out to 0% over a four-year period. Technology costs raise technology expenses with 45% (Y10 vs. Y0).
- **Labor:** ITC technologies reduce the need for hired labor with 41% (Y10 vs. Y0).

* This table shows P&L for around 20 "proof of concept" farmers in a village. P&L for other ITC farmers may differ according to subsidized amount. Baseline farmer according to CMS (baseline study report on chili cultivation in Guntur and Khammam) and ITC data. See full report for more info.

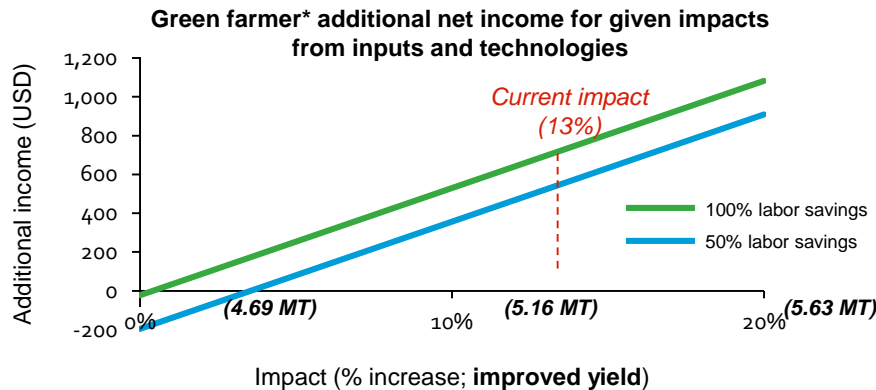
Farmer sensitivity analyses

A. Yield impacts

Likelihood:
High

Impact:
High

- **Description:** ITC farmers are provided with technologies that improve yields and reduce labor needs, but also require capital
- **Risk:** if yield impacts and/or labor need reductions are less than expected, benefits might not outweigh the additional costs
- **Mitigation:** ITC extensively tests the effectiveness of technologies before stimulating farmers to adopt and finance



Discussion

ITC technologies improve farmers' yields with 13% (4.69 vs. 5.30 MT/ha), leading to an additional net income of \$696. To cover additional technology expenses (\$1,331), an impact of 0% would suffice. Improved quality (buying share), premiums and labor savings (26%) already cover these expenses. If labor savings would be 50% lower, impacts should be at least 4% to cover expenses

*Yields for a fully supported ITC farmer in year 10 based on experience-based average yield predictions

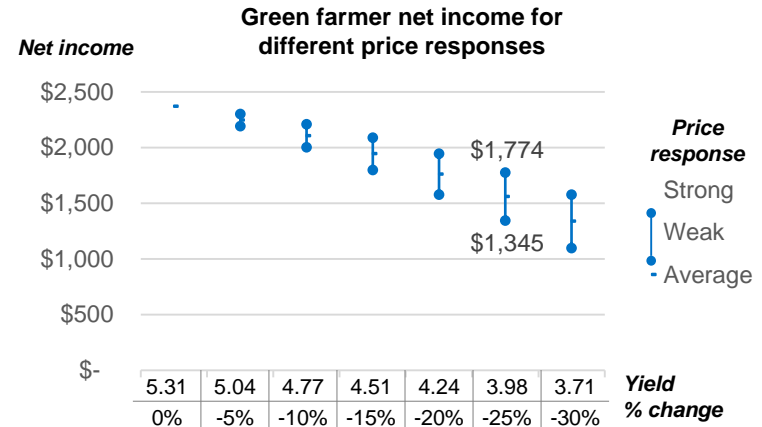
** Derived from historical data on yields and prices (source: ITC). Strong, average, weak response: -90%,-70%,-50% yield price correlation

B. Yield price

Likelihood:
Medium

Impact:
Medium

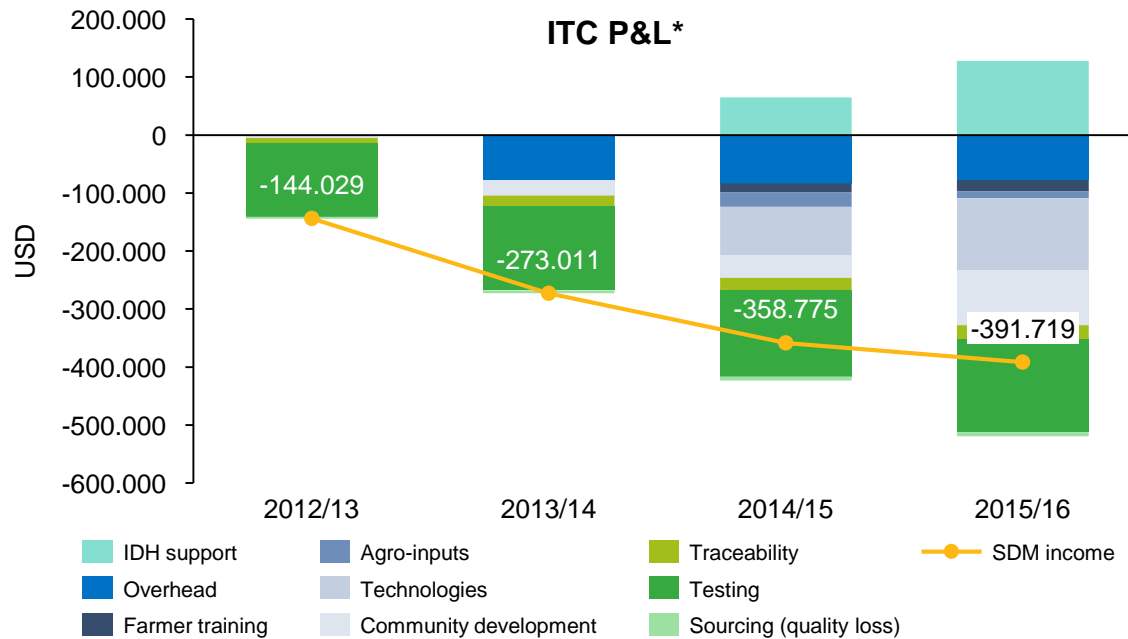
- **Description:** chilies depend to a large extent on external conditions (e.g. rainfall, pests)
- **Risk:** such external factors can severely impact chili yields and subsequently farmer incomes
- **Mitigation:** the impact of yields losses are mitigated the stronger market prices respond to red chili scarcity



Discussion

Even in 2015/16 yields dropped with -25% compared to the year before. Given the strong** price response that year net income for a green farmer would have dropped to \$1,774, this could have been \$1,559 in case of weak price response.

SDM P&L, scale and sustainability

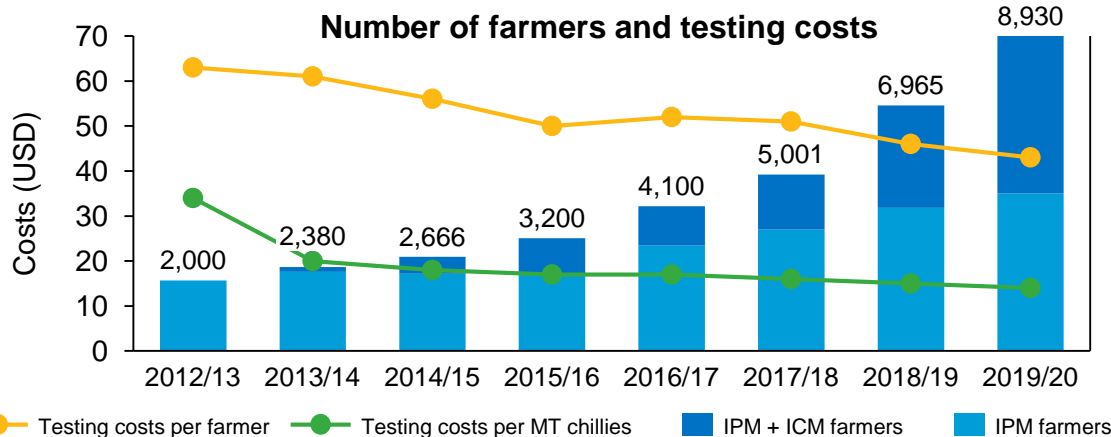


Economic sustainability of the program

Since margins are not known, the commercial return for ITC is not included in this analysis.

Main revenue drivers

- **Buying share:** higher volumes (around 80-90%) are bought per farmer since individual yields are higher because of ICM practices and RA premium makes ITC the preferred buyer
- **Pass percentage:** the % of volume bought from farmer that can be sold for export prices (instead of local market prices) goes up from 60-65% to 80-85% (IPM) and 97% (ICM), thus increasing margin
- **Green farmers:** after 2 years of continuously delivering ICM quality chili volumes an ITC farmer becomes a green farmer. Testing costs per volume unit go down since post-harvest testing is no longer deemed necessary for these farmers



Main cost drivers

- **Overhead costs (staffing, admin and logistics costs):** these costs stay stable over time.
- **Technology & community development costs:** as more farmers require financial assistance and more villages are included in the program, these costs increase.
- **Testing costs:** as sourcing volumes go up, testing costs increase. However, testing costs per MT chili sourced go down as the # of green to total farmers grows. Green farmers have consistently delivered ICM quality chili and their volumes making the post-harvest tests redundant (standard for regular farmers)

* Based on ITC Spices actual budgets apart from testing and sourcing costs

SDM projected outcomes and main learning questions

These results do not represent an official assessment of SDM success or failure by IDH or NewForesight. An indication is given based on the analysis done in this forward-looking study and assumptions provided by the SDM operator(s). Actual assessment should be done during and after the SDM, using measured data

SDM objectives

Projected outcomes

1 Increase the security and quality of supply

- This analysis shows an expected 42% increase in profitability of the farmer. This is the result of increased yield and quality of production.
- ITC Spices only sources volumes that they believe will meet international requirements, and our analysis predicts an additional 49,412 MT of chili sourcing by 2019/2020.
- Since ITC Spices created a strong business case for the farmer to improve production and sell to them farmer loyalty goes up with 30% from 40% to 70%.

2 Create a resilient business model

- One-on-one interaction and constant ITC Spices presence in the targeted villages ensures full traceability and a credible claim.
- This form of engagement with the farmers contributes to high levels of adoption: inputs and technologies are adopted by farmers.

IDH Learning question

SDM insights

How is adoption and loyalty measured by ITC and what are thoughts on how to improve both adoption and loyalty?

ITC measures two indicators for adoption and loyalty: buying share and pass percentage. ITC believes the day-to-day interaction with farmers is key to high scores on both indicators. Community development projects also contribute to strengthening the relationship with the farmer.

Which parts of the SDM could be financed by commercial finance and which parts would still require additional funding and why?

ITC invests in new GAP and technologies that have the potential to upgrade production. These investments sometimes require additional funding since the ROI is uncertain. For established services within the SDM, ITC expects to see a ROI through sourcing: higher volumes of better quality for a lower cost of production.

Does ITC look at the whole farming system? Do they pay attention to the food crops of farmer households? If so, how and why?

ITC has a wide array of business which covers 16 different crops. The GAP and technologies are designed, developed and implemented to help a farming community to replicate and utilize the model in any crop grown in that particular region for an environmental friendly way of production.

Key insights



Key drivers of success

- Strong business case for the farmer:
 - Price incentive: ITC Spices' subsidizes inputs and technologies
 - Proof of concept: immediate changes in chili yield and quality
 - Sales differential: ITC Spices only buys chili produce that meets international requirements
 - Buyers differential: ITC Spices' field teams takes care of the administration needed for certification and chili volumes are only RA certified when sold through ITC Spices
 - Facilitation of sales: ITC Spices relieves farmer of packaging chilies and transport to the market
- The ITC Spices business case is driven by unknown margins, but success factors are:
 - Pass percentage and buying share go up while testing costs go down due to green farmers
 - Investments are high, but running costs for diminish over time
 - Focus on whole village to avoid cross-contamination: all farmers will produce according to international food safety guidelines



Key risks

- Price fluctuations on the international market may cause farmers to choose another cash crop, e.g. cotton prices are currently low, when they improve cotton may become crop of choice
- Weather related viruses or drought have plagued chili production in recent years affecting yields and quality



Key factors in replication

- A subsidy injection, creating a clear price incentive, can be interesting when the Return on Investment period is small
- Including a dependency on the buyer (in this case by administering Rainforest Alliance certification: premium only obtained when selling to ITC Spices) increases farmer loyalty
- One-on-one interaction makes sure farmers implement learning from the training, and use recommend inputs
- In close knit communities with high social cohesion community development projects contribute to farmer loyalty
- Focusing on all the farmers in a village strongly diminishes the risk of cross-contamination: all farmers in the village attend to international food safety guidelines



Opportunities for improvement

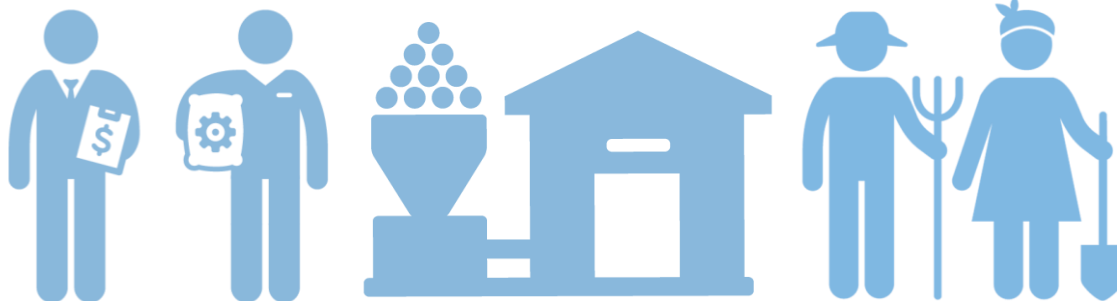
- ITC Spices' subsidies cause a peak in income of the farmer in Y1 and Y2. In Y3 farmer income diminishes. Question is whether this peak is key to convincing a chili farmer to switch to ITC Spices' recommended practices, and how he responds to the dip in income in Y3. ITC is currently researching how their SDM can benefit from optimizing subsidies on farm inputs.
- Technologies, such as polyhouses, are quite expensive at present. Further research can bring down the costs, and shorten the return on investment period, making the technology attractive for the farmer to invest in.



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For more information, see the [IDH Smallholder Engagement Report](#). This report, gathered by analyzing over 30 individual SDMs in 16 countries, provides insights into IDH's data-driven business analytics. The findings identify drivers of farmer resilience, cost reduction and financial sustainability in service models and the conditions needed for a supporting enabling environment.