

Last	Change	Open	High	Low	Previous	Time (CT)
56.84	-0.13	57.00	57.01	56.81	56.97	1:57:11 AM
57.16	0.04	57.71	59.40	58.86	59.12	3:05:18 AM
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65.84	-0.57	66.40	66.70	66.00	66.41	4:01:34 PM
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74.37	0.00	74.37	74.37	74.37	74.37	4:01:34 PM
74.84	0.00	74.84	74.84	74.84	74.84	4:01:34 PM

Operations Manual for the Commodity Futures Prices project



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Managing Uncertainty

A majority of India's population depends on agriculture and allied activities for their livelihood. The sector sustains the better part of the country's demand for grains, oil-seeds, livestock feed, and increasingly non-food products for the production of bio-fuels. The production of these commodities relies on information on their demand and supply, market conditions, climate and many other economic factors such as global production, substitutes and commodity prices. Stable production and food prices necessitate information regarding commodity prices given the volatility of global economic and non-economic factors. Futures and spot prices can provide farmers the stability required to manage the uncertainty of such markets.

Futures markets provide information about expected prices and so provide farmers with a superior idea of harvest-time prices than last year's or current prices. In this way, futures prices reduce price uncertainty, thus aiding farmers in planting, harvesting and storage decisions (Danthine, 1978; Anderson and Danthine, 1983). Providing futures prices information may also have beneficial effects on investment decisions.

On the other hand, using spot prices reduces the chance that farmers realise a poor price, either by informing farmers of which markets to travel to or by aiding in price negotiations. Studying the spot market for mackerel in southern India, Jensen (2007) shows that greater price transparency can lead to spectacular gains in efficiency, and improve the wellbeing of producers. Price information can also be useful in bargaining with middlemen, or in prompting a decision to take the goods directly to the market.

In a liberalised economy, the risks arising from price uncertainty are being increasingly borne by farmers and traders rather than by consumers or the government. Prices are subject to swings that can be both long and unpredictable, and the direct and indirect costs, including foregone opportunities, associated can be large. For households that depend on agriculture and allied activities for their subsistence, price risk constitutes a major obstacle to asset accumulation. While it is important, and even essential, to protect against such risks, it is equally important for an organisation to consider several factors that influence the success of undertaking such a project.

Introduction

The Futures Prices Information project was designed and developed to help farmers manage price risk, by providing them with two types of prices - futures and spot prices. By assisting farmers in managing risks, this project has the potential to contribute significantly to economic growth, by improving the allocation of risk and increasing agricultural productivity. The ability to manage risk may lead to specialisation in crops, adoption of high-yield output varieties (which produce more on average, but are more sensitive to weather shocks), greater use of capital inputs and technology (that could enhance productivity), and the decision to invest in crops whose expected price is highest. Finally, the project has important advantages for development impact. It requires no up-front capital investments, is market-oriented and perhaps costs less than government interventions. Moreover, futures prices help shift risk to those who are better able to and willing to bear it.

The study was undertaken by the Centre for Micro Finance (CMF) in collaboration with the Self Employed Women's Association (SEWA), the National Commodity & Derivative Exchange Limited (NCDEX) and Prof. Prof. Shawn Cole (Harvard Business School) and Stefan Hunt (PhD student, Harvard Business School). Since 2007, the organisations have disseminated crop price information to more than 50 villages in the state of Gujarat, India, in an effort to reduce price risk and promote forward-looking planting decisions among farmers. In addition to providing futures and spot prices for three main crops (cotton, castor and guar seed), the organisations trained villagers on how to use futures prices for their benefit.

This manual emerged from the implementation of this study. It is our hope that this manual will make it easy for organisations to determine if such a project suits their objectives, resources, and implementation strategy.

Overview of the Futures Prices Project

The project seeks to evaluate, by way of a randomised control trial implemented by the Centre for Micro Finance (CMF), the effect of providing commodity futures prices on the ability of agricultural producers to manage commodity price risk. Specifically, sowing decisions are often based on the previous years' harvest time prices or current spot prices. These price expectations may differ considerably from harvest time prices, resulting in farmers sowing a suboptimal combination of crops and/or suboptimal quantities of crops. In evaluating the effect of this intervention, the key variables of interest are the movements and accuracy of farmers' price expectations and their consequent sowing decisions.

Through working with the Self-Employed Women's Association (SEWA), a labor union for poor women in Gujarat, a group of farmers in each treatment village were selected and trained by the National Commodity and Derivatives Exchange (NCDEX). The training included a financial literacy component which sought to educate farmers about futures markets in addition to a component aimed at teaching farmers how to use futures prices to guide their price expectations and make more efficient sowing decisions.

Subsequently, commodity futures prices for cotton, castor and guar seed were displayed on price boards in the treatment villages. In the first year of the project (2007), SEWA had their team leaders (aagewans) update price boards in each treatment village. The prices were displayed in the villages prior to and during the sowing period.

In March/April 2007, a baseline was conducted 74 villages in four districts of Gujarat: Ahmedabad, Mehsana, Surendranagar and Vadodara. A total of 37 treatment villages and 37 control villages were selected for the study. A midline survey conducted in August, 2007 revealed no statistically significant change in the price expectations or cultivation decisions of farmers in the treatment group. In March/April 2008, a second round of surveying was carried out expanding the number of treatment and control villages to 54 in each case, and a subsequent post-survey was carried out.

The sections that follow explain the various steps involved in the implementation and also summarise the inputs necessary to conduct such a project. The Appendix provides a proposed timeline for implementation, a budgeting sheet and other useful tools.

1. Staff Requirements

The success of any project depends on its implementation and having the right kind of staff is imperative for its accomplishment. While the implementing organisation should have employees who are qualified and able to work on the project, it is most important to have an employee willing to serve as the project director. It is the project director who will coordinate most aspects of the project and will also manage and train the training team. The director's responsibilities require that he or she has a strong finance background (at minimum, a Bachelor's degree in a finance-related field) and a working knowledge of futures markets. Depending on the scope of the organisation's project, this may or may not be to be a full-time position.

The organisation should also have employees who are willing to serve as trainers. This position requires a basic finance background and a working knowledge of futures markets (this might not be necessary if the director has the time to instruct them). Depending on the number of villages the organisation seeks to enter and offer the product in, this position could require a significant time commitment. If the organisation does not have enough employees to fill this role, it must have the financial resources to hire trainers from an outside firm. Detailed information on identifying trainers is given in Section 6 below.

Finally, though it is not necessary, it is helpful for the organisation to have representatives in the villages it seeks to train. These could be full-time employees living and working in the target villages or informal advocates of the organisation. What is important is that they be able to assist with on-the-ground implementation. If the organisation lacks such representation, it should have employees who are willing to travel to the villages to advertise training sessions, monitor price dissemination, and evaluate the project.

2. Identifying Villages

The organisation should first decide which villages it will implement the project in. There are several considerations to take into account when making this decision. The foremost consideration is for the organisation to choose villages to which the project is relevant. The futures information project is most beneficial to farmers who plant more than one crop for which futures prices are available. Thus, the organisation should pick villages in which a large number of farmers are in this position.

It is equally important for the organisation to choose villages in which it is feasible to conduct the project. For one, the villages should be sufficiently close to the organisation's headquarters to make regular visits possible. It is also important to pick villages in which there is support for the project from the government and other important officials, or at least resistance and political interference. The organisation should give preference to areas in which it has representatives or members, as these individuals could assist with on-the-ground implementation.

More importantly, the organisation should seek villages in which farmers express an interest in learning about futures prices, or at the very least, a willingness to attend a training session on the topic. It is very important that the organisation research potential villages in advance to determine which meet these criteria. The number of villages the organisation chooses should depend on the size of the villages and the organisation's resources. It is advisable for the organisation to start with a small number of villages and expand as it gains experience.

3. Choosing Contracts

Once the organisation decides where it will implement the project, it must choose which crops it will provide price information for. In making this choice, it should consider the needs of the village and the availability of price information.

It is very important that the organisation provide trainees with information that is relevant to them. While conducting initial research, the organisation should take note of which crops are commonly planted in each village. It should particularly try to understand the choices faced by farmers who plant multiple crops. Which crops do they usually choose between? Ideally, the organisation would be able to provide information for all such crops, which will, most likely, be limited by the availability of contracts in the market.

If the organisation chooses to provide price information to certain crops from among the multiple that are cultivated in their chosen project area, it would be useful to give preference to those for which prices are highly volatile (as opposed to crops for which only output is volatile). This will assure that it is providing the most useful information to the village.

Finally, keeping in mind that the success of the project lies in its usefulness, the organisation should provide price information for markets that are as close to the village under consideration as possible.

4. Identifying Trainers

The next step is to identify individuals qualified to train the villagers on using futures prices. The organisation should seek people who are financially literate and at least somewhat knowledgeable about futures markets. A brief examination can be administered to determine whether or not individuals meet this requirement.

The organisation should also make sure that its trainers have excellent communication skills. Trainers must be able to speak the language spoken in the village(s) the organisation wishes to train.

Finally, though it is not required, it is very helpful for trainers to have an agricultural or rural background. This will allow them to relate to the trainees' situation and better answer their questions.

Ideally, the organisation will have employees that meet these qualifications and are able and willing to serve as trainers. However, this might not always be the case. If organisation employees lack the qualifications necessary to serve as trainers, the director of the futures information project (see a description of the position in the Introduction) could train them on basic finance and futures markets. If employees simply lack the time, or if they are not interested in serving as trainers, the organisation will have to hire qualified individuals from an outside firm. In this case, the organisation should consider hiring from a commodity exchange or some other type of financial institution. The number of trainers needed depends on the number of individuals the organisation seeks to train and the time and travel constraints of the trainers.

Once the trainers are selected, the project director should teach them about the project and about how to conduct a training session for the villagers. The attached Trainer's Guide provides an idea of what should be said and done during training. Before the team begins training, the director must make sure that they are adequately prepared. As stated in the guide, trainers should conduct at least one or two mock sessions before going to the village.

5. Training

In addition to preparing the trainers, the organisation should also conduct training sessions for the chosen villages for which it should choose an appropriate date, time and location. It should research sowing patterns in order to schedule training session no more than a few weeks before farmers sow seeds. This will allow the organisation to begin disseminating prices immediately after training as price information is most useful when farmers are making planting decisions.

The date and location of the training session should be agreed upon in consultation with villagers so that maximum number of people can attend. For instance, the organisation should make sure that it is not held on a major holiday. The venue should be able to hold a large number of people and should be easy for all villagers to reach.

It was found that the training was most effective when there were a maximum of 50 trainees per session and to conduct multiple sessions in each village. However, the organisation should consult with its trainers to determine if this number is appropriate for them.

Advertising the training well in advance through flyers, public announcements, requesting influential villagers to inform others, and through the organisation's representatives or employees is recommended to ensure that all villages are aware of the date, venue and content.

A short video displayed during the training session can reinforce the material covered in training in an entertaining way. Furthermore, it can be used in follow-up training (as mentioned in the following section) and in instances in which an interactive training session cannot be held. The attached Filming Guide offers a sample script for the organisation to use, along with helpful filming tips.

6. Price Dissemination

Disseminating information on prices immediately after training ensures that the ideas covered in training are fresh in the trainees' minds once prices become available. When considering dissemination, the organisation needs to consider the format and locations where this information will be displayed.

One option is to display the prices on large chalk or dry-erase boards that can be hung in public places, such as the local government building, post office or market. The number of boards needed depends on the population of the village but one could estimate that a board is needed for every 2,500 people. The advantage of such boards is that they can be updated by hand. Prices could also be printed and distributed so that the information is more legible and also widely circulated. However, there is the question of updating them.

The responsibility of updating the information boards can be given to a representative residing within the village or to a villager. Choosing the right person for this job is critical since the person, the "price poster", should be reliable. He or she can also be paid if the organisation has sufficient resources and should be compensated for any costs incurred when posting price information. A trainee would be ideal since he or she would understand futures prices and the importance of updating the boards better than a villager who has not received training.

An important consideration in this process is the means to transmit price information to the poster. The information could be published on the internet or a local newspaper, or sent via e-mail, fax, phone call or text message. The method chosen should depend on the technology available to the poster and the organisation.

An additional consideration is the frequency of updating the information. Ideally, prices should be updated at least once a week and the organisation could choose a certain day of the week to do so. Prices should continue to be updated until harvest time, so that the trainees are able to use harvest-time spot prices when they sell their crops in the market in order to realise a fair price for their crop.

7. Follow-Up Training

If resources are available, the organisation should strongly consider conducting follow-up visits to the village to reinforce the content of the training sessions. Trainees are often unaware of futures markets and prices before training and one session is usually not sufficient to give them a good understanding of the concepts.

Follow-up training can be conducted in a number of ways. A month or two after training, the trainers could go back to the villages and re-train interested individuals. Alternatively, the trainers could conduct a shortened version of the training session or even a question-and-answer session. The method chosen should depend on the needs of the villagers and the time constraints of the trainers. As mentioned earlier, if the organisation creates a training video, it could be useful here. The video could be shown to the villagers at regular intervals to reinforce the lessons they learned in training.

8. Monitoring

It is critical that the price boards are updated promptly and correctly, and the organisation should devise a monitoring system to ensure this. Once again, if the organisation has representatives or members within the village, it could assign this role to them. Another possibility is for organisation employees to travel to the village to check that prices are being posted correctly. However, the costs associated with this option would likely limit the number of visits to once or twice a month. A better option would then be to choose a villager to monitor the price-posting.

In choosing someone to fulfil the “price checker” role, the organisation should take the same considerations it takes when selecting the price poster. That is, the price checker should be reliable and somewhat knowledgeable about futures prices. As in the case with the poster, how the organisation chooses to communicate with the checker will be determined by the technology available to the checker and the organisation.

Just as the organisation chooses a day to send the prices to the poster, and a day for the poster to post prices, it should choose a day for the checker to inspect the boards. For example, the organisation might decide to send the prices to the poster every Saturday. It might then request that poster post prices no later than Monday, and that the checker check the price boards on Tuesday. That way, every Tuesday, an organisation employee could call the checker to make sure the prices have been posted that week. To ensure that the prices have been posted correctly, the organisation employee might ask the checker what price is written for a certain crop and date. If errors are repeatedly reported, or if the boards are not being updated on a weekly basis, the organisation should make a visit to the village to determine the source of the problems.

As in the case with the poster, the organisation could consider whether to pay the checker for his or her work.

9. Evaluation

It is essential that every organisation evaluates the impact of its intervention. Has access to futures price information influenced trainees' sowing decisions? Has it increased their profit at harvest time? Obtaining answers to such questions would give the organisation an idea of how to improve the project in the future.

If the organisation wishes to carry out such an evaluation, it should first conduct a baseline survey, which must be done prior to the training session. The baseline survey should ask the trainees about how they currently make sowing decisions, their sowing plans for the season, their family income and so on.

At the completion of the project, the organisation should conduct a "re-survey" with the same group of trainees at harvest time. The survey could include a feedback section, in which the trainees are able to make suggestions about the organisation's project. A second re-survey can be conducted after the crop is sold. While the first re-survey focused on understanding the affect of the project on farmers' sowing decisions, the second could focus on the results achieved by the farmers (crops sold, profit earned and so on).

It is important that the impact evaluation be conducted in a way that is statistically sound. If the organisation has employees who are knowledgeable about surveying and statistical methods, it could recruit their help in this process. If not (and if resources are available), it might consider hiring professional surveyors on a contract-basis.

10. Financial Inputs

The following table presents the financial inputs necessary to conduct this project. The numbers shown are based on the actual costs faced by SEWA, NCDEX and CMF in conducting their project in India. To obtain an idea of how much the project cost over a certain number of months, one simply has to weigh the rates accordingly.

Administrative Costs	
Salaries	
Project Director	Rs. 35000/month
Project Assistant	Rs. 7700/month
Training Costs	
Trainer stipends (per village)	Rs. 250
Trainer (and field coordinator) out-of-pocket expenses	
Traveling (per village)	Rs. 450
Food Expenses (per village)	Rs. 150
Overnight halt expenses (per day)	Rs. 500
Laptop for use during training sessions	Rs 1500 per month
Misc. expenses (Renting DVD player etc.) (per village)	Rs.200
Training material expenses (Charts, Stationery etc)	Rs. 3000
Expenses incurred towards training of trainers (per day) (assuming a team of 3)	Rs.1000
Price Dissemination Costs	
Cost of Board	Rs. 400
Incentive for Price Poster	Rs. 50/month
Incentive for Price Checker	Rs. 50/month
Cost of Sending SMS to Price Poster	Rs. 12.5/month
Cost of Monitoring (Payment to Central Monitor)	Rs. 12.5/month

Appendix: Proposed Timeline

The organisation can use the following timeline to structure its project. Modifications should be made according to the organisation's particular situation. For instance, if the organisation has a large number of target villages but very few trainers, it might need to allocate more time to conducting village-level training. It is likely that less time would be needed to train the trainers in this case, as they would be few in number.

Prior to Week 1	Appoint project director, and if applicable, determine what role other staff members will play; draft budget for project
Week 1	Identify target villages and choose futures contracts
Week 2	Identify qualified trainers
Weeks 3-4	Train trainers
Weeks 5-6	Conduct training in target villages
Week 7	Begin price dissemination and monitoring
Week 8 Onwards	Continue price dissemination and monitoring, and if applicable, conduct follow-up training; once price dissemination is complete, conduct evaluation

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ભાવનું પત્રક		દેવેલ ભાવ બહલાવ્યા તારીખ				
પાક	જાત અને સ્થળ	અમા વર્ષની લઘુમૂલ્યની કિંમત		ફુજર ભાવ	વાચક બજાર	
		માસ	ઊંચી / નીચી	Hajar Bhav	માસ	ભાવ
કપાસ	શંકર, ૨૦ કિ. ગા. SHANKAR KAPAS					
	વી - ૨૯૭ ગુરુ-૧૯૭૨, ૨૦ કિ. ગા. V797 KAPAS					
ઑરંડા	ડિસા, ૨૦ કિ. ગા. ARANDA DISA					
	ભાભર, ૨૦ કિ. ગા. ARANDA BHABHAR					
	રાજકોટ, ૧૦૦ કિ. ગા. ARANDA RAJKOT					
ગુવારબીજ	ગદવપુર, ૧૦૦ કિ. ગા. GUAR					



Pictures of the price board and a villager viewing information disseminated

This manual was written by Preen Bathia when she interned at the Centre for Micro Finance in the summer of 2008. Preen received a B.A. in Economics and Policy Studies from Rice University and currently works for Booz & Company, a management consulting firm.

All views, interpretations, recommendations, and conclusions expressed in this paper are those of the author and not necessarily those of the supporting or cooperating organisations. Editing and layout was done by CMF.

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