

Designing a Farmer-Centric Organic Certification System

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ABSTRACT

This paper summarizes our experiences designing an organic certification system for appraisal and monitoring of small farmers in Gujarat, India. We worked with a local NGO partner to create JCS, a simple, reliable, and affordable certification system. By including farmers themselves in its design and operation, the system encourages greater ownership by its stakeholders. After a successful review meeting with NGO management and leading organic farmers, the system is in the final stages of design, and is planned to certify farmers throughout the state over the next several months.

Categories and Subject Descriptors

H.4.m. Information Systems Applications: miscellaneous

General Terms

Economics, Human Factors

Keywords

sustainability, organic agriculture, certification, design

1. Introduction

This paper summarizes a three-month-long design study with farmers, consumers, and produce retailers in Gujarat, a state in northwest India. We implemented JCS, an organic certification system for small-scale and marginal farmers. The goal of JCS is to address the farmers' demand for accessible and affordable certification that accounts for the realities of small-scale agriculture in Gujarat. The certification system's design goals of inclusiveness, transparency, and education emerged through conversations with our partner and fieldwork with farmers. We presented the resulting prototype to many of Gujarat's most established small-scale organic farmers. These farmers expressed both enthusiasm for the system and a feeling of involvement in the design process. The system implementation is currently being completed, and will be used to certify farmers throughout the state in early 2008.

Our NGO partner, Jatan, has been the driving force behind organic farming in Gujarat for the past twenty years. The organization is based in Vadodara, Gujarat, India, consisting of less than ten staff members, several of which are full-time volunteers.

2. Identifying a Need

Our field visit began by attempting to gain both a historical and contemporary understanding of agriculture in India. Through a review of literature and discussions with researchers, NGOs, and other activists, we found that designing information systems for

farmers would be impacted by many social, political, and economic factors. We observed Jatan's work supporting small producers in adopting sustainable agricultural practices, including their efforts in establishing a produce tracing system for a retail outlet which they themselves operated in Vadodara. These discussions with organic farmers and consumers led to our interest in creating a certification system.

2.1 Consumers

We spent two weeks learning about the consumer market in Vadodara, through visits to each of the four main organic outlets in the city. Like most Indian cities, consumers in Vadodara usually purchase their produce at large urban markets. Our goal was to understand what brought some customers to the smaller, out-of-the-way organic outlets. We did this by engaging customers in a survey which would give us an understanding of their purchasing behaviors, motivations, and perceptions regarding organic products. We formally interviewed sixteen customers and had many more informal discussions. Several important insights emerged from our survey. First, customers are loyal. Most of the customers had been purchasing organic products, such as vegetables and dry grain, for years. Next, we discovered that health is the primary motivation for choosing to purchase organic products. Finally, awareness amongst the general population about organic products and their potential benefits was greatly lacking. The majority of the customers we observed were well-educated and in the middle to upper socioeconomic class.

2.2 Farmers

In addition to understanding consumer demand, we spent a significant amount of time with small farmers to learn about their lives and economic circumstances. Repeatedly, we were told about the many difficulties faced by farmers throughout Gujarat. The main problem was their inability to earn sufficient income in the face of rising costs of living and decreasing land holdings. We learned that a significant number of farmers were leaving their land in search of better economic opportunities in urban centers. As farm input and processing costs were rising at a faster rate than market prices available for their crop, many farmers were also falling into debt.

With the exception of some organized groups, Gujarat's organic farmers are scattered sparsely throughout the state. Due to a lack of scale and diversification, these farmers are not able to engage in contracts with large buyers offering the generous premiums that organic farming cooperatives in other parts of India enjoy. This leaves individual farmers with the difficult task of negotiating premiums from local intermediaries. The farmers we spoke with expressed frustration at how local buyers would not recognize obvious quality differences between their produce and that of conventional farms. One farmer said he felt insulted knowing that his organic vegetables were mixed in with chemically-treated

vegetables by his buyer. Farmers also did not trust buyers, and wanted to know more about any premiums they earned. This sentiment seemed to be behind many farmers vocal demand for accessible organic certification.

Synthesizing these observations, we determined that an information system to communicate shared values amongst producers, intermediaries, and consumers was necessary. An accessible, low-cost, low-overhead organic certification system would provide a guarantee to consumers and intermediaries on the demand side, while also helping farmers differentiate their product and open up new opportunities for gaining market premiums.

3. JCS – A Grassroots Certification System

After researching the existing certification schemes available to farmers in Gujarat, it was clear that no existing system would fully address the needs of farmers in Gujarat. We thus decided to design a new system from the bottom up.

From the outset, we agreed that the main design goals would be to make Jatan’s certification *inclusive, transparent, and educational*. Instead of a binary accept/reject model, we would take an incremental approach by recognizing farmers for their achievements, however small, in moving towards sustainable farming practices. For this, the certificate would include a quantitative index of progress based on established organic farming standards. Thus, farmers who are new to organic farming, or who are committed to organic practices but are unable to meet rigid international standards, can still be recognized for the progress they have made. By simplifying and opening up the evaluation criteria, we would also allow consumers to learn more about how their food is grown, and for farmers to discover possible avenues for improving their practices.

This farmer education would also be part of the inspection process itself. Conducted by peer organic farmers, Jatan’s inspections would be redefined as “appraisals” intended to provide a holistic understanding of a farmer’s social, environmental and economic condition. As expert local farmers themselves, Jatan’s farm appraisers would not only have the expertise to evaluate a farm, but would also serve as a trusted mentor. Based on these design goals, we began developing the Jatan Certification System, or JCS.

The central component of JCS is the JCS scorecard. Working with Jatan, we adapted their organic farming standards document and other supporting literature on organic agriculture into a set of multiple-choice criteria that break up into three categories representing the core aspects of Jatan’s organic farming philosophy: environment and sustainability, health, and social concerns. During farm appraisal, a paper version of the scorecard would be filled in with the appraiser’s observations, recording information such as the number of trees per acre and the distance from neighboring non-organically grown crops by selecting from

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multiple-choice options. Each criterion’s options are assigned weights which are then used to calculate an “organic farming index”.

Conceptually, the scorecard addressed our design goals and

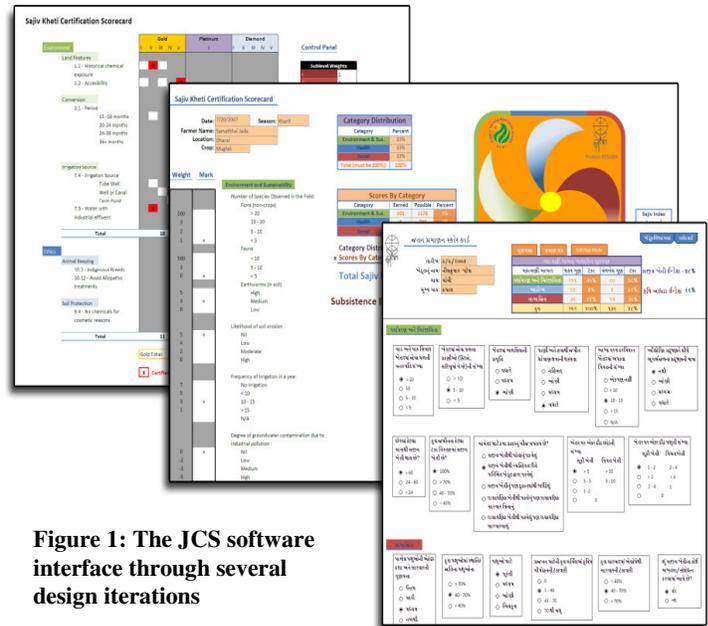


Figure 1: The JCS software interface through several design iterations

offered additional benefits. By including a scoring index, JCS is able to acknowledge farms that aren’t 100% organic, but are making progress towards this goal. The scorecard also helps in making the system open by offering a simple means of communicating the decision to certify a particular farm to all stakeholders, including farmers, consumers, and retailers. Additionally, the scorecard is flexible because criteria and/or weights can be modified to implement the unique philosophical requirements of a particular certifier. During scorecard content development, we took advantage of this flexibility when Jatan wanted to include a means of capturing the degree to which a farmer depends on the farm for his or her livelihood. We achieved this by adding a fourth category and calculating a separate “subsistence index”.

3.1 Implementation

To facilitate the long-term maintenance of this system within a small organization like Jatan, we wanted to use software that would not require any additional infrastructure, and that would provide a quick no-nonsense means of recording appraisal information and generating certificates. Microsoft Excel offered several advantages. First, it was a familiar application to the Jatan staff, which would be both using and modifying the application. Second, it allowed for rapid development for iterative prototyping. Finally, it provided a good balance of simple calculation and graphics generation to meet our limited needs.

The system was developed through a participatory process incorporating input from Jatan staff, other NGOs, consumers, and farmers. In the early stages, we explored a small number of design alternatives for the layout of the appraisal scorecard. As the staff became familiar with Excel's capabilities, they asked for more sophisticated functionality, including data validation and more complex graphics. Through this process some disadvantages of our choice to use Excel were exposed, including the lack of data storage and indexing, as well as in its graphics capabilities.

4. Evaluation and Outcome

To evaluate the resulting system, Jatan organized a meeting with forty of Gujarat's most established and knowledgeable organic farmers. The goal of the meeting would be to decide which system(s) Jatan should offer farmers in Gujarat. In addition to JCS, two existing national-level certification schemes were presented for consideration.

First, we introduced JCS to the farmers and assembled NGO staff, describing the principles of inclusiveness, transparency, and education that motivated its design. We then introduced the JCS scorecard and asked for feedback on the incremental, index-based approach (see Figure 2). The response was positive and the farmers affirmed that the approach was reasonable.

Next, to give the farmers a real sense of how the system would work in practice, we arranged for a mock farm appraisal at an organic farm near the meeting location. Farmers were asked to fill out the scorecard for the farm, as if they were conducting a real appraisal. Then a discussion was initiated on the scorecard criteria. Farmers provided their input on criteria to be added, removed, or changed based on their experience working with the scorecard. Later, the criteria weights and scoring formula were introduced, leading to another heated and highly technical discussion.

There were many issues raised that revealed the limitations of JCS. The scorecard content, namely the criteria and their corresponding options, created contentious discussion. Assigning weights was difficult as determining relative values to incomparable farm characteristics are somewhat arbitrary. One farmer expressed concern that the wide variation of climatic characteristics just within the state would result in regionally skewed scores, and suggested a separate region-specific weighting of various criteria. Many made the point that providing multiple-choice options could introduce subjectivity to the scoring process, as appraisers could have different interpretations for certain options. A large group of farmers requested that a minimum



Figure 2: The first author presenting JCS to farmers.

organic index be required for Jatan to issue a certificate. This showed the farmers' concern for protecting the integrity of the Jatan brand by maintaining selectivity.

At the end of the three-day-long meeting, farmers were asked to provide their recommendations. Approximately 80% of the farmers present at the meeting accepted JCS as their first choice and requested that Jatan implement it as soon as possible. A timeline was prepared and plans were made to issue certificates by the end of the next harvest season. In preparation, the scorecard, certificate and documentation have all been translated to Gujarati, the local language. Regional coordinators will now disseminate information about the process to farmers and begin soliciting applications for appraisal.

5. Conclusion

This case study described our experiences designing an accessible, locally appropriate organic certification system for small farmers in Gujarat, India. Our system was presented and accepted by farmers, and will be put into operational use by the end of 2008. However, much work still remains, including soliciting feedback from consumers on the design of the certificate and quantitative index, and establishing a training program for appraisers.

6. ACKNOWLEDGMENTS

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