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You reap what you pick
Longstanding community economic development among jasmine growers of coastal Karnataka

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Abstract
Purpose – This article aims to examine the history, mechanisms, interconnectedness and effectiveness of the jasmine-growing enterprise in coastal Karnataka. This article investigates the formation and ongoing successful operation of a community enterprise that is locally originated and administered. The case of the jasmine flower growers in coastal Karnataka is a case of small-scale growers who for 75 years have operated a long-standing local community-based enterprise. Using trust, repeated interactions and efficient mechanisms of pricing and distribution, this enterprise has prevented poverty among its participants for three generations.

Design/methodology/approach – This article provides a descriptive analysis of the enterprise as well as results from an empirical study of 700 growers. The article used cluster analysis of local villages to represent the 7,000 participating households.

Findings – Studying local growers who are the producers of the flowers and who are living off of it, this article found a high level of satisfaction and trust towards those running the enterprise. For many people in the region, this ongoing enterprise is the difference between poverty and hunger and living well.

Research limitations/implications – The article is based on one local community that is lucky to have a desired resource (one type of jasmine flower) coveted by many users.

Practical implications – Combined, this article provides an account of a unique and successful sustainable enterprise, initiated and run at the grassroots level, which serves as a model for future economic development. In addition, it lists the features that are most relevant for the ongoing success of the enterprise and suggests how a new social and economic development project can learn from this enterprise.

Originality/value – This is an amazing enterprise that was not studied before and can be a role model for many adaptations.

Keywords Social capital, Sustainability, Asia, India, Economic development, Poverty alleviation, Local initiative

Paper type Research paper
Introduction

While extreme poverty has declined globally and many programs have been developed to assist the poor, many people around the world continue to live in extreme poverty (Chen and Ravallion, 2008; Cnaan and Curtis, 2011; Feinstein and Picciotto, 2000; Ravallion et al., 2009; Sumner, 2012). Nearly a billion people live below the poverty line, which the World Bank officially estimates to be USD1.25 per day. Many of these poor people depend on small-scale agriculture for their livelihood, and they need to produce and market sufficient quantities to make a living. Market fluctuations and changing tastes are often major challenges for small-scale farmers, resulting in long-term poverty (Fischer and Qaim, 2011; Jayne et al., 2010). Thus, to alleviate this deep poverty, numerous enterprises have been developed and tested. In this article, we focus on a rural enterprise that originated locally > 75 years ago and is still operating successfully. Our aim is to learn from its success and to propose it as a possible model for sustainable poverty alleviation in similar communities. This organically grown enterprise has withstood time, changing circumstances, competition and the risk of exploitation. Moreover, its operations continue to rely on local resources, human and social capital and low technology coupled with the principles and mechanisms introduced by the founder.

Small-scale farmers, from herders to vegetable growers, confront many barriers that prevent them from being economically successful. These limitations include command of advanced technology of production, inefficient distribution and sales systems, changing demographics as well as local politics or corruption. Thus, high transaction costs make market participation for the poor a barrier to development (Barrett, 2008; Holloway et al., 2000; Omamo, 1998). For small-scale farmers, selling at a fair price is quite difficult, as they are often exploited by middlemen. Consequently, small-scale farmers form farmer-cooperatives to help with marketing, distribution and assurance of fair prices and decent profits (Bijman and Hu, 2011; Boselie et al., 2003; Holloway et al., 2000; Markelova and Mwangi, 2010; Markelova et al., 2009; Narrod et al., 2009; Meccheri and Pelloni, 2006; Rao and Qaim, 2011; Spielman et al., 2009; Wanyama et al., 2009). For example, in India, small-scale grape growers use a marketing cooperative to lower transaction costs and attain a better bargaining position when dealing with foreign traders (Roy and Thorat, 2008).

Not all farmer associations are alike. Bingen et al. (2003, p. 405) differentiated between three types of enterprises. First, contract/business programs facilitate farmer access to goods and services required for production and marketing of a target commodity. Second, project/technology programs focus on the promotion of improved technology. Finally, process/human capacity investments facilitate technology adoption and marketing, but focus initially on the development of skills and social capital, such as literacy programs, marketing activities, assistance for collective self-help and decentralized development planning. The enterprise highlighted in this article is almost exclusively the first type: contract/business-oriented. Since its inception, it has had no multiplicity of goals. While lacking social, political or environmental goals, this enterprise, as we will demonstrate, did require some initial social capital, which was later reinforced by farmer participation in the cooperative, resulting in a high level of social capital. The farmers’ sole purpose of organizing collectively was the efficiency gained in marketing, distribution and sales. This single focus of facilitating a farmer’s
access to sales and distribution has likely caused the enterprise to be sustainable for such a long period.

The production, distribution and marketing of the jasmine flowers have been a grassroots operation. By introducing a simple, transparent and efficient system of coordinated distribution and sales, growers have found a reliable and stable source of income. For three generations, beginning long before sale cooperatives and farmers organizations became fashionable, the production and selling of jasmine flowers has successfully helped alleviate poverty among a large group of people (about > 6,000 households). The enterprise has provided income even in times of recessions, political upheavals and technical advances.

The aim of this article is to examine the history, mechanism and effectiveness of this community-based enterprise of jasmine growing in coastal Karnataka. We first briefly describe and discuss the enterprise and the process of cultivating jasmine, which was previously presented in a study by Handy et al. (2011). Where necessary, we introduce relevant descriptive data, which were collected by the authors. The next section provides a brief history of this enterprise to give its context and motivations and concludes with our research questions. This is followed by the sections describing the methods and presenting the findings, where we provide an overall evaluation of the enterprise. We conclude with conceptual and practical implications.

History and context: growing and selling jasmine
Jasmine is widely cultivated for its flowers with > 40 species growing in India (Pradeepkumar et al., 2008). The jasmine buds are especially coveted in India for a variety of uses. The Udupi jasmine[1] is particularly prized for its delicate scent and is the preferred flower in ceremonial events; from weddings to funerals, it is used as decoration and personal adornment such as garlands and in women’s hair. It is also widely used in Hindu temples as offerings by the devotees and garlands for holy statues. The Udupi jasmine grows abundantly in the Shankarpura region in the Udupi district of coastal Karnataka.

While growing, the jasmine bush needs to be pruned regularly. New shoots will flower abundantly and dead branches must be removed to keep the bush healthy. The bush has to be carefully watered by hand early in the morning on a daily basis (in the absence of rain). The buds that are commercially valuable must be harvested at the tight-bud stage—a job that is done early in the morning, between 6 and 8 a.m. (Pradeepkumar et al., 2008). Each branch of the bush and all the buds have to be very carefully inspected, and the buds must be handpicked. This year-round daily harvesting almost always involves the whole family, including children.

The buds are then put together in strings using thin strands made from the banana plant. Tying is done using slipknots with one bud held tightly against the other. A hundred buds make approximately a 6-inch (18 cm) chain of jasmine buds. By 10 a.m., the chains of jasmine are wrapped tightly in banana leafs, and a chit of paper with the household’s name and number of buds is attached to the package. This early end of the jasmine-workday allows many growers to hold other jobs, as the working day in India often starts at 10 a.m. or later.

The work itself, although simple, is laborious and cannot be mechanized. As such, households with a greater number of members (usually in joint families) can care for more bushes than those with fewer members. Most households grow jasmine at a level
constrained by the availability of familial labor, though about half the growers interviewed have managed to hire helping hands.

It is estimated by local experts nearly 75 per cent of households in the district participate in jasmine cultivation. Based on our findings, an average participating household cultivates 32 jasmine bushes (the range varies from 5 to 100; SD = 15.1). We also found that, on average, a grower successfully harvests about 1,362 (SD = 1,114.4) buds per day with seasonal variations. In peak season, a grower produces on average 3,127 (SD = 2,421.6) buds per day, and in off-season, only 625 (SD = 622.1) buds per day. Our findings show that jasmine growers use small plots of land that either are available in their private gardens (94.7 per cent) or adjoining their houses on public lands (3.9 per cent). In addition, 2.9 per cent of the sample used land leased from neighbors.

The enterprise

The beginnings

While cultivating jasmine is an old Indian tradition, this specific enterprise is about 75 years old. In the 1930s, in the Shankarpura region in the state of Karnataka, Catholic families had trouble making a living from agriculture. Their local church priest thus persuaded his parishioners to turn their attention towards growing the Udupi jasmine. He envisioned it would be a good means for his parishioners to earn a livelihood. After the initial success enjoyed by the first few parishioners, others replicated their experiment and soon most parishioners as well as regional non-Catholics were growing the Udupi jasmine for commercial purposes.

The priest, who later became the bishop of Mangalore, also devised a unique price-setting system that continues to protect the growers against exploitation. The enterprise connects the households (growers) to local agents (collectors) to sell to traders (buyers) with connections to wholesalers in outside markets.

The buying and selling

From the household, the buds travel to the one-street town of Shankarpura, where the traders operate. Each household is connected to any one of the 105 local agents who are employed by one of the six traders. The agent is responsible for collecting the buds from the household and arranging them in commercial units of attes. Each jasmine atte (meaning a “bundle” in the local language) consists of 800 buds. Because very few households produce a full atte daily, the agent combines the strings of jasmine buds from multiple households to produce one atte.

Each agent collects the stringed buds from about 50-100 participating households and brings them to a designated trader in Shankarpura. Agents hire young boys to collect the packets of jasmine buds. They go from house to house by bicycle to pick up the bundles left by growers, either at delivery points on the roadside or outside their homes.

The agents untie the packets and re-bundle the flowers into attes. The agents also keep a ledger of the number of buds collected from each household, using the chit provided by the household. In our visits to the agents, we saw them picking the paper chit and depositing it into a desk drawer without any verification.

The traders of Shankarpura, in addition to employing the agents, hire workers who receive the buds from the agents and/or households, reorganize the buds received into tradable units of attes, tightly wrap them in banana leaves and then store them in cool water.
The traders sell to wholesalers, often outside the immediate region, who then sell the attes as far away as Mumbai and Dubai. Traders also keep records of buds received from each agent, which are used to determine the trader’s weekly payment to the agent.

Every day of the year, by 11 a.m., the buds arrive at Shankarpura. The traders contact their wholesalers in large Indian cities to establish the demand for the day. The six traders meet under an old banyan tree[2] – open to public scrutiny – to determine the price they can obtain and the amount they will pay for each atte to the growers.

This system of price determination favors the growers. For example, if on any given day, a trader (call him X for now) faces an excess demand from the wholesalers, he must offer to raise the price he is willing to pay the growers to higher price P. At price P, wholesalers from the other five traders who are unwilling to pay the higher price will reduce their demand, leaving the other five traders with an excess supply. Then, negotiations will start among the traders; the five remaining traders will only agree to price P (suggested by trader X) if and only if X is willing to buy their excess supply. Price P is thus negotiated until all traders agree to the price. The price then reflects the accurate willingness to pay in the market, and the growers benefit through increased competition among the traders and wholesalers. Wholesalers adjust purchasing decisions based on overall market demand, which ultimately drives the supply price all the growers receive. Therefore, the growers are guaranteed a low minimum payment even if there is no demand for their full quantity of buds raised. However, in the year of the study, this happened only once.

The agreed upon price is then posted on a small blackboard hung under the banyan tree and is published in local newspapers. Based on this calculation of daily prices and the amount of buds received, the trader pays the agent. In turn, the agent keeps track of buds received from each grower and ensures correct payments are made to them each Sunday.

The traders keep for themselves approximately 2 per cent of the price received by sellers. For example, if the price of the atte is determined by traders to be INR 244, the trader returns to the grower INR 240 for each atte received. The trader assumes all payments to agents, risks involved in sales to the wholesaler and logistics of transferring the flowers. When our data were gathered in 2009, there was an agreed upon price band that ranged from INR 24 to INR 400. However, since June 2011, this upper limit was removed and the lower band is INR 40.

Our 2009 data show that the average price obtained was 203.5 (SD = 118.5). The data also show that the ceiling of INR 400 was reached many more times than the floor of INR 24 (see Figure 1). Given that the ceiling was reached more often, we may assume this price band favored the traders. The 2011 removal of the ceiling and upward shift of the lower band clearly improved the price guaranteed to the growers.

**Assessing the enterprise**

Given the daily repeated interactions between the parties, it can be assumed the enterprise monitors itself quite well and works efficiently with minimum dissatisfaction. However, this assumption has never been verified. The growers face significant risks, as they have no control of the collection, distribution or pricing aspects of the jasmine trade. Is this enterprise an exploitation of small growers by traders? Are individuals participating in the enterprise because they have few options? Or alternatively, are they satisfied with this way of doing business? Do they see this enterprise as satisfying their monetary needs?
Power concentrated in the hands of six traders makes one group in this enterprise particularly vulnerable: households for whom growing jasmine is their primary source of income. We assume that this group is much more dependent on this enterprise in comparison to households that have other sources of income. As such, we expect the former group to be more compliant and satisfied with the arrangement as is. Drawing on the study by Castells (2011), power is acquired and denied through participation in networks. Those who rely on jasmine growing as their primary source of income are assumed to possess a more limited network; thus, they are weaker than those who have access to other sources of income.

To determine the impact and sustainability of the enterprise and underlying satisfaction of growers involved, this research will ask the following questions:

- the importance of the enterprise to the growers’ economic survival;
- the growers’ satisfaction with the enterprise; and
- the growers’ view of this enterprise’s future.

To answer these questions, we compare responses of growers for whom income from jasmine is their main source of income to growers for whom this income is only an addition to other sources of income.

**Methods**

*Procedures*

Data were collected in the Udupi taluka (district) and in surrounding villages. The first stage of the study included unstructured interviews with ten growers, four agents and two traders. The authors, together and in sub-groups, met with these informants and asked them about the enterprise, its structure and history. This data served as the basis for the aforementioned description of the enterprise and for constructing the questionnaire used for this article.
No lists documenting all people in a given village exist; hence, it was not possible to do a random sample. Instead, we resorted to selecting whole villages, i.e. cluster sampling. Our unit of analysis was a household, defined as “usually a group of persons, who normally live together and take their meal from a common kitchen, unless the exigencies of work prevent any of them from doing so” (Government of India, 2007). We interviewed the adult person (s) that was (were) at home.

**Instrument and data collection**

Based on the literature and the first phase of our research, we composed a draft questionnaire that asked about the household composition, practice of growing jasmine, marketing of the jasmine buds, interaction with the agents and traders and household assets[3]. After conducting informal interviews with jasmine producers, a four-page survey questionnaire was constructed by the four authors and a team of six local experts (professors, bank officials and community leaders). In February and March 2009, the questionnaire was pre-tested by one of the authors who lives in the Udupi taluka and corrected as needed.

All questions were factual and most questions (> 95 per cent) were close-ended. The questionnaires were composed and written in English but were verbally asked in Tulu, Konkani or Kannada (local languages), according to respondent familiarity. We translated the questionnaire to Kannada, but it was only used for reference. Given that mostly factual data were obtained and local villagers used one of the three languages, local experts advised against translation of the written questionnaire. To overcome interpretation barriers and to achieve uniformity in data collection, we invested in training the interviewers. One of the authors identified a group of local students who were willing to be trained and serve as volunteer interviewers. The students were trained with the interview instruments and schedule. A role-play of mock interviews was part of the training, which generally lasted a full day (10 hours), and also consisted of asking the questions in a local language and circling the correct answers in the English questionnaire. The students were then bused to the selected village. One of the authors went along with the students and checked for conformity and uniformity of the data collection process. At the end of the day, the completed questionnaires were checked for internal consistency and possible mistakes and were corrected the next day.

As is common in India, there were no cases of refusal to respond to the survey when an eligible adult was at home (Cnaan et al., 2011). For many of the respondents, it was an honor that educated students were coming to their homes. Interviewees were not financially compensated. On average, an interview lasted 20 minutes. The interviews were conducted between March and June 2009.

Data were collected on weekends, at times that most people were at home and available for interview. The group, composed of 8-10 students with questionnaires, arrived at the village centre, and each pair of interviewers was given a few streets and asked to interview as many households as possible on those streets. It is possible that all households were not covered; it is likely the poorest (who do not possess jasmine bushes) and those away from the village centre were excluded.
Sample
The Udupi taluka is composed of small villages. We selected a quarter of the Udupi taluka villages and a few of the nearby villages which are outside the following talukas:

- Shirva; Innenje (where marketing centre is located);
- Kuthyaru;
- Kalathuru;
- Mudarangady;
- Paaduru;
- Belle (Moodubelle and Padubelle); and
- Belman, Sooda, Palli and Ninjur.

In addition, growers from Belman, Sooda and Palimar in the Karala taluka were included. Houses without jasmine bushes were excluded from the sample.

It is estimated there are about 6,000 households participating in jasmine production in the study area. Our sample consists of 700 households (about 12 per cent) from the relevant region. Because we selected full villages and there is little variability between the villages, we assume that our sample is representative of the area’s jasmine growers.

Findings
Growers' reliance on the enterprise
We found the average household size in our sample is 4.23, with a range of 1-15 (SD = 1.8). The higher end of the range suggests some households were not organized as nuclear families, but joint families, in which the sons, their wives and children resided together with the parents. Almost half the responding households (49.9 per cent) reported the income from cultivating jasmine as their primary or only source of income. There was no significant association between family size and reliance on the enterprise as a primary source of income ($\chi^2 = 28.0$, df = 24, $p > 0.05$).

The average household has been engaged in jasmine production for > 19 years with a range of 1-90 years. In some cases, households recently joined the enterprise, and in other cases, it was a long-standing family tradition. A few households (about 8 per cent) reported that they, their parents and grandparents were engaged in cultivation of jasmine even before the enterprise was established. For those reporting jasmine growing as their primary source of income, the average participation rates are longer; while the difference is only three years (20 vs 17 years), it is significant ($t = 2.35$, $p < 0.05$).

Respondents were reluctant to report their incomes, as observed by all interviewers. Thus, we used ownership of 14 household items as a proxy for the financial status. The overwhelming majority of the interviewees owned their homes (98.6 per cent) and the land on which they cultivated the jasmine bushes (95.6 per cent). As seen in Figure 2, while cars, computers, motor cycles and bikes were uncommon, other household items were quite common at rates above the average population in rural Karnataka (Euromonitor International, 2008; Government of India, 2007). For example, more than three-quarters of the growers’ households owned electricity, indoor sanitary facilities, televisions, radios, cell phones and gas stoves. In other words, the majority of the jasmine growers of coastal Karnataka own their homes, land and common household items that indicate incomes well above poverty level.
We also tested whether households for whom growing jasmine is a primary source of income own more household items than those for whom growing jasmine is secondary. As shown in Table I, we found that out of 14 categories of items, there was a significant difference in only four categories, which all represented less essential items: bicycles, radios, telephones at home and cell phones.

Growers’ experiences and satisfaction with the enterprise
In an enterprise in which six traders set the jasmine price for > 6,000 growers, there is room for disagreement and discontent. After leaving the daily jasmine production by the roadside, the growers read the price in the newspaper the next day and expect to be paid for the week’s harvest on every Sunday. A significant amount of trust must exist for such an enterprise to succeed at several levels: the production of jasmine, the harvest being left at the roadside for pick up, the agent’s role in recording and reporting the harvest, the fair price set by the traders and the receiving of money at the end of the week. No written contracts exist at any of these points in the enterprise’s transactions. As such, this research examines the level of growers’ satisfaction in the enterprise’s players and arrangements. The next section discusses these relationships at each level.
We first focused on the production aspect of the enterprise. Almost nine out of ten growers (89.6 per cent) reported good and supportive relationships with their neighbors regarding jasmine production. More than half of the total sample gets suggestions from neighbors on how to cultivate (57 per cent) and help with plucking (51.3 per cent). Only 73 growers (10.4 per cent) reported they would prefer to be independent and not engage with neighbors. As the jasmine bush needs daily watering, we asked the growers if access to water is a problem. Almost four-fifths (79.9 per cent) of them answered that it is not a problem. Those that have problems resolve them by relying on neighbors (47 per cent) and public water sources (30 per cent), while the remaining reported using less water than optimal. In addition to watering, growers need to fertilize the land, but this is done infrequently and poses no real problem.

Next we focused on the relationships between growers and agents. A majority of growers (84.1 per cent) do not deal directly with a trader, but are connected through an agent, and hence are quite dependent on their relationship with the agent. When asked why they chose the particular agent or trader, nearly half (46.3 per cent) reported there being a sole agent in their region; thus, the growers were limited in their interactions with other agents or traders. In the area where there were no such monopolies, half of the respondents said their choice of agent was based on the fact that the agent was a person “from my community” or “a neighbor”. Very few (4.1 per cent), reported that they deal with a particular agent because they were obliged to do so due to financial obligations or other reasons.

We then asked the growers whether they had ever experienced problems with the agent or trader whom they dealt with. Most replied negatively (85.1 per cent). No significant difference was found between the group who was reliant on jasmine production as the primary source of income (15.8 per cent) and for whom it was

<table>
<thead>
<tr>
<th>Ownership of</th>
<th>Per cent of those for whom jasmine is a primary source of income who own this item</th>
<th>Per cent of those for whom jasmine is NOT a primary source of income who own this item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td>96.0</td>
<td>95.2</td>
</tr>
<tr>
<td>House</td>
<td>98.0</td>
<td>99.1</td>
</tr>
<tr>
<td>Car</td>
<td>17.2</td>
<td>15.4</td>
</tr>
<tr>
<td>Motorcycle</td>
<td>41.3</td>
<td>47.3</td>
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<tr>
<td>Bicycle***</td>
<td>39.8</td>
<td>55.8</td>
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<tr>
<td>Radio*</td>
<td>77.9</td>
<td>85.2</td>
</tr>
<tr>
<td>Television</td>
<td>88.8</td>
<td>88.9</td>
</tr>
<tr>
<td>Gas stove</td>
<td>74.8</td>
<td>73.2</td>
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<td>Refrigerator</td>
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<td>61.5</td>
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<tr>
<td>Telephone at home**</td>
<td>66.8</td>
<td>76.6</td>
</tr>
<tr>
<td>Cell phone**</td>
<td>75.1</td>
<td>84.0</td>
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<tr>
<td>Computer</td>
<td>26.1</td>
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<td>Electricity</td>
<td>92.6</td>
<td>92.9</td>
</tr>
<tr>
<td>In-home sanitary facilities</td>
<td>86.8</td>
<td>91.2</td>
</tr>
</tbody>
</table>

Notes: *p < 0.05, **p < 0.01, ***p < 0.001
secondary (14 per cent). However, the only group that reported fewer problems was that selling directly to the trader (9 per cent), as compared to those dealing with an agent (16 per cent), with an almost significant difference ($\chi^2 = 3.57$, df = 1, $p = 0.059$).

Among those who ever had a problem ($n = 104$), almost-two thirds of the complaints (66.3 per cent) were regarding quantity of buds recorded and a third about time of payment (34.5 per cent) or price (37.5 per cent). Note that growers could answer yes to more than one problem. In six of ten disputes, a compromise was reached, and in three of ten, a new agent was secured. The rest were not resolved to the growers’ satisfaction. In over half of the compromises, a neighbor was involved in settling the problem. Still, most reported never having had problems with the agent responsible for collection or payment.

When we asked the growers, using a four-item Likert scale, how satisfied they were overall with the sales and marketing enterprise, the majority (91.6 per cent) rated it as satisfactory to very satisfactory. A small group (7.4 per cent) rated it as somewhat satisfactory and only 1 per cent rated it as not satisfactory. For any enterprise that has been in operation for so long and has had the same group of traders at the top of the pyramid, a record of only 1 per cent grower dissatisfaction is a great achievement.

Growers’ perception of the enterprise’s future and social impact

We asked the growers if they planted new jasmine bushes in the past three years. As the economic productive lifespan of jasmine bushes is approximately 5-10 years, some growers are likely to replenish older stock. As such, if there is a trend for planting new bushes, the growers assume the enterprise will last long and vice versa. We found that more than a third of the households (37.9 per cent) reported having added new bushes in the past three years. Among those who added bushes, the key reasons were desire for extra income (58.1 per cent) and available space (46.4 per cent). A significantly lower percentage reported having removed bushes in the past three years (23.7 per cent). Among these growers, the main reason was that the bushes have to be renewed, as mature bushes are not very productive (48.8 per cent). Only a handful of those who reduced their stock stated they were no longer in need of money from jasmine growing (8.4 per cent).

Households for whom jasmine growing is not their primary source of income (42.5 per cent) were significantly more likely to plant new bushes than those for whom it is the primary source of income (33.2 per cent) ($\chi^2 = 6.3$, df = 1, $p < 0.05$). It is likely these households had additional resources, and thus could afford increasing production. Regarding removal of bushes, there was no significant difference between the groups.

If confident of the sustainability of the enterprise, some growers take on additional costs by increasing their investment in bushes and hiring outside labor. Nearly half (48 per cent) of the interviewed growers reported having hired part-time help to work the jasmine bushes. However, this practice is of small scale, as the average number of paid helpers is 2.33, with a range from one to eight. We found no significant correlation between hiring outside help and family size or reliance on the jasmine income as the primary source of income. This finding suggests that those who can afford additional help and have room for more jasmine bushes consider it a safe and desired source of income.

To determine growers’ trust of the enterprise and those involved in it, we asked to what extent growers trusted the agent and traders they worked with. On a three-item
scale, ranging from low to medium to high, low trust for agents and for traders were reported by only 1.6 and 2.6 per cent of the growers, respectively. Trust in the local communities was lower, yet still quite high trust overall; only 5 per cent reported low trust with respect to the safety of their jasmine bundles left by the roadside for collection, and 7.6 per cent reported low trust in neighbors. Overall, these are impressive levels of trust considering this commercial arrangement runs without written contracts or supervision.

Perhaps the best indication of trust in the enterprise is the fact that almost half the growers (47.1 per cent) do not record how many buds they provide to the agent, relying on the agent to count and pay the correct sum. A grower’s practice of recording their daily production or not was correlated neither to whether the sale was made to a trader or an agent nor to whether jasmine growing was a primary source of income. This implies that half the growers fully trust the bookkeeping of the agents and traders.

In the field of social development, social impact often tends to be measured by the enterprise’s ability to create sociopolitical changes in the community and to empower participants. To determine the grower’s involvement in their communities, we asked if they were members of a number of organizations that operate in the area and promote interactions among people in the community. The growers in our sample are not especially politically engaged and most were not interested in participating in local organizations. Three-quarters of the household were not members of any local organization (74.9 per cent). The following membership rates were reported:

- Gram Panchayat (local self-government organization) 14.9 per cent;
- social service organizations 8 per cent;
- community organizations 7.1 per cent; and
- youth clubs 5 per cent.

An additional one-sixth comprised members of a micro-credit self-help group. We also asked if participation in the enterprise helps with children’s education, and the overwhelming majority (95.1 per cent) answered negatively.

Discussion and implications

The enterprise of jasmine growing in coastal Karnataka is a successful sustainable community-based enterprise, as described in this article. It has been ongoing and uninterrupted for nearly 75 years and growers keep replanting and planting new bushes – an indication of satisfaction and commitment. Most growers have been members of the enterprise for many years. Since its inception by a parish priest, the enterprise has flourished and grown in scope to include growers, agents and traders of all religions and castes.

Most importantly, many households in the region live above poverty level and their housing conditions and quality of life are above regional norms. For most growers, even for those with other sources of income, the income from jasmine production is stable, predictable and year round, ensuring growers will not go hungry even if other sources of income do not materialize. This organically homegrown enterprise works as an informal producer and seller cooperative without the transaction costs of a legal cooperative.

The enterprise provides thousands of households in the region with a guaranteed income from jasmine production. The growers have limited uncertainty about how much money they will receive and when they will receive it. The price is guaranteed to
be above the floor price, and payments arrive weekly and on a timely basis. Very few programs can boast such enduring success in alleviating poverty, where the housing (almost no homelessness) and its quality (most houses are connected to electricity and possess electronic household items) are far above the national and even state average.

We expected that households for whom jasmine growing is a primary source of income (49.9 per cent of the sample) would be significantly different than those who had other additional sources of income. While we found some differences between these groups, only two were significant:

1. those for whom jasmine growing was a primary source of income were engaged in the enterprise for a longer period but planted fewer new bushes; and
2. regarding ownership of household items, the groups differed for only four (cars, computers, motor cycles and bikes) out of the 14 studied items.

There are several lessons that can be learned from this successful enterprise when planning new social and economic development projects. First, the level of trust and cooperation between all members of the enterprise, from growers to agents, bus drivers and traders, is very high, with very few reports of mistrust. As we have found, most growers trust the agents and traders. Few reported ever having any problems, and when problems occurred, they were mostly resolved. Trusting they will be fairly paid, about half the growers do not record their production; this indicates that the enterprise has garnered a very high level of trust. The trust is not unidirectional. In our observational visits to the agents, we saw that they too do not check if the reported daily production matches the actual number of buds, but take the information on the household chits as accurate. The agents place these chits in a drawer, and after the buds have left the premises, they record the information knowing they can trust the growers’ reporting. Another example of the enterprise’s level of trust is that many households leave their daily product unattended (by the roadside at pick-up points or other people’s homes) for quite awhile before it is picked up. While some reported being apprehensive about this arrangement, most do not fear theft and have little doubt that their packet will arrive in its entirety to the trader.

The repeated economic transactions between players in the community are daily (for production) and weekly (for payments) and are important elements of social capital (Coleman, 1990; Fukuyama, 1996). As Miguel and Gugerty (2005) indicated, a homogeneous community, where members know each other and have repeated interactions, is able to apply sanctions against non-participants or norm violators. In this case, social capital is translated to trust, which enables the enterprise actors to lower transaction costs and receive steady incomes.

Second, the community-based enterprise is self-sufficient. There is no foundation, government subsidy or special tax abatement. Although India is a country rich with development organizations, with a recent study counting 3.3 million in 2009 (Shukla, 2010), this enterprise is not reliant on any outside help or aid.

Third, the enterprise is a self-adjusting program. For example, the number of traders changed over time to accommodate the growth in scope. When the price margin paid to growers (24-240 INR) was insufficient, it was changed to favor the growers (24-400 INR); recently, the ceiling was removed and the floor was upped to INR 40 at the behest of the growers.
Fourth, the returns to the investment are done in an equitable and transparent manner, in that no one grower of equal production reaps greater benefits than another. This point is of importance and needs further elaboration. In this enterprise, the traders determine the price in an open-access area and then disseminate it daily, making it available to all in the village and afar. The reputation of the six traders has even spread to other villages and districts where they are not active; consequently, growers and sellers in these villages use the traders’ determined prices that are available in the local papers. Each grower receives the same price, which removes petty jealousies or daily bargaining with the buyers. The traders avail only about 2 per cent of the price as a fee for their efforts, with the growers receiving the rest. For this fee, households receive a guaranteed sale of all they produce each day. The previous price band that set the ceiling and floor on the price received by the growers (i.e. the excess or shortage absorbed by the traders) often favored the traders; however, with the removal of the ceiling in June 2011, the price now favors the growers.

Fifth, the traders do not face the risk of business takeover. The traders’ takeout (about 2 per cent of the sale price) is not enough to allow a commercial company to enter the enterprise and replace the traders. The traders have other sources of income, as they are insurance agents, real-estate agents and shopkeepers; however, they rely on their reputation as jasmine traders to be successful in their other occupations. Similarly, no single trader can directly purchase the entire regional jasmine production and become a monopoly because they do not share their wholesalers or information about their wholesalers’ daily demands.

Finally, the success of the enterprise is largely based on its reliance on available local skills and raw materials (Meccheri and Pelloni, 2006). The design of the enterprise and its operations are all locally based, with no external agent responsible for the raw material, knowledge of production or operational aspects of the enterprise. The skills of jasmine production are passed down from one generation to the next. The enterprise was created by local people and has since been operated and managed by them rather than external experts. On the other hand, the demand for the product is not only local but also exported and relatively stable. This demand may fluctuate due to seasonal variations and religious festivals, but it is not susceptible to changes in fashion or consumer trends. It has deep historical, cultural and religious roots, thus ensuring an ongoing stable demand from users. It has relatively few substitutes, as artificial flowers are unacceptable due to rules banning artificial materials in religious offerings.

The enterprise is slowly evolving and adapting to new technologies and situations. In its earlier days, it covered a small area that was reachable by walking or biking. Today the scope is larger and other modes of transportation are used. With mobile phones increasing area coverage, not all attes are even brought to the traders; often, they are directly shipped from the agent once the buyers have been secured. While many aspects of the enterprise are hard to change, some new technologies have been adopted.

Many economic development projects attempt to not only assure economic improvement but also enhance social and political well-being. This community-based enterprise has no such pretence. While many development projects seek to provide more than simply a sustainable business enterprise, this is not the goal of this enterprise. Using Bingen et al. (2003) typology, this enterprise is a Contract/Business. It was developed locally by the people to lower the transaction costs of bringing jasmine to the marketplace and provide a supplemental income to those living in poverty. It has
reached this goal in a sustainable fashion for 75 years, a measurement of its evident success. In a program that deals with people who live in extreme poverty and have, on average, only an elementary education, it is unrealistic to expect that any enterprise will achieve multiple goals, such as economic, social and political empowerment. As Narayan (2002) stated, the nexus between empowerment and poverty reduction is indeed questionable and not necessarily linked together. Even without such high expectations, poverty in coastal Karnataka has been alleviated through a sustainable enterprise. In many external top-down programs carried out on behalf of a non governmental organization, the government or the World Bank, the enterprise ends up as a failure because local residents do not feel that it belongs to them (Scott, 1998). However, this enterprise was not introduced externally but emerged locally. Although there is no role for external agents in this enterprise, the understanding of its salient features may help governments and development agencies design intervention enterprises tailored to local culture, resources and social arrangements.

Critical to the success of this enterprise is that each grower owns or his or her land and bushes; their income depends on their contribution and is unaffected by the contributions of others. Furthermore, households have control over their production i.e. if a household has sufficient income, they can stop cultivating jasmine bushes and if they need additional income, they can cultivate more jasmine bushes. As such, each household knows that “you reap what you pick”. But once they have “picked”, they do not have to worry about marketing, distribution or sales.

This enterprise cannot be replicated fully as is because it relies on special natural resources (the localized variety of the Udupi jasmine), which enjoy a constant demand, have proven sustainability and are locally controlled and managed. However, the lessons learned here can benefit future attempts to organize cooperatives in India and in other parts of the world. The price mechanism, collective sales and distribution and household ownership of land and production can be replicated. The combination of these principles assures the sustainability of the enterprise. Understanding these key components is important for adapting the enterprise to other regions in India and the world. For example, any group of farmers that produce locally flavored milk to make unique regional varieties of cheeses can become organized in a similar vein. Therefore, the lessons of coastal Karnataka’s jasmine growing enterprise can help guide other communities to sustainably and successfully generate income for local people using indigenous materials.

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Notes
1. *Jasminum sambac*: Cultivation of this variety of jasmine started in Shankarpura in the Udupi district about 75 years ago and was recently registered under intellectual property rights.
2. Recently, the trade was moved to a local shop across from the place of the banyan tree.
3. A copy of the questionnaire can be obtained by request from the corresponding author.
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