

**Honey in Bihar –  
EDA Rural Systems Pvt Ltd**
**Muzaffarpur, Bihar**
*Report, December 2008*
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**VALUE CHAIN RATING**
**RATING OUTLOOK\***

\*M-CRIL's viewpoint (positive, neutral or negative) of the future prospects of the organisation

| Dimension                                   | Rating Grade |
|---|--------------|
| Project management                          |              |
| Outputs – producer level                    |              |
| Linkages                                    |              |
| Market support                              |              |
| Producer institutions                       |              |
| Results – employment<br>– poverty reduction |              |
| <b>Overall</b>                              |              |

**Synopsis**

The honey value chain initiative of EDA was undertaken in the Muzaffarpur region of Bihar, India – one of the poorest sub-regions of the world. The project context includes an environment of extensive feudalism and social fragmentation. The project employed a strategy of facilitating BDS markets to promote technical services, linkages and promoting choice in marketing while strictly minimising direct grants. The six year project (2002-8) supported by the Ford Foundation built upon a three year credit facilitation activity undertaken by EDA with a limited fee-for-service provision made by the Small Industries Development Bank of India.

The EDA project has resulted in substantial productivity gains for producers of honey and a significant increase in the price realised by them, leading to a phenomenal increase in the number of producers. This was achieved through the introduction of technical services to enhance productivity, facilitation of market competition amongst buyers, the promotion of producers' associations for collective selling and policy advocacy with the complementary development of linkages. The variable strength of the emerging producers' associations is symptomatic of the fragmented and feudal social structure of the region. It would take a substantial additional effort by EDA to address this issue and cement the collective action enabled by these institutions. Their potential has, nevertheless, been demonstrated. The patchy approach of the banks to providing credit support also needs to be addressed.

**Main Performance Indicators**

|   | 2002               | 2008      |
|---|--------------------|-----------|
| Beekeepers (households)                 | 1,800              | ~9,000    |
| - direct participants in project        |                    | 2,000     |
| Women in beekeeping                     | All beekeeping HHs |           |
| Beekeeper associations                  |                    | 45        |
| * Hives per beekeeper                   | 28                 | 44        |
| * Production per hive, kg               | 30                 | 45        |
| Honey production in region, m tonnes    | 1,500              | 17,800    |
| Price of honey, Rs/kg                   | 25                 | 61 [43]   |
| Value of honey produced in region, \$   | 787,000            | 22.6 mill |
| Contribution to hh income, Rs '000      | 21                 | 121 [86]  |
| \$ per annum                            | 440                | 2,500     |
| * Beekeepers employing hired workers    | ~20%               | ~50%      |
| * Wage employees (beekeeping) – men     | ~400               | ~5,000    |
| <b>Cost of VC initiative</b> (external) | Rs1.25 cr          | \$258,000 |
| - per beekeeper directly affected       | Rs6,256            | \$129     |
| - per beekeeper in region               | Rs1,390            | \$28.70   |

 \* Sample – indicative estimates Exchange rate: US\$=Rs48  
[deflated figure based on CPI for Agr. Lab]

**Highlights**
**Strengths**

- Professional facilitation team
- Strict market based strategy: no grants to value chain actors
- Excellent linkage support & effective, focussed advocacy
- Increased competition amongst buyers.

**Issues**

- Social fragmentation limits efficacy of producer associations
- Banks patchy in providing credit support
- Dairy federation support still equivocal
- Lack of baseline information – sector and producer levels.

\* This report is derived from the draft report on testing guidelines for Assessing the impact of value chain approaches on rural poverty; under collaborative development led by CATIE (Costa Rica), supported by the Ford Foundation.

## Rating Rationale

| Dimension   | Details   |
|---|---|
| <b>Status of VC project</b>                             |   |
| VC location – project area                              | Muzaffarpur + 2 adjoining districts of Bihar, India   |
| Years of operation                                      | 3 (credit only) + 6   |
| Legal status of VC facilitator                          | Private limited company   |
| Financed by   | Ford Foundation   |
| Support from Government                                 | Negligible  |
| Current status of programme                             | Self-managed  |
| <b>Economic context</b>                                 |   |
| Area population (3 districts)                           | 10 million  |
| Income per capita, Bihar                                | Rs10,570 (\$264)  |
| India   | Rs33,283 (\$832)  |
| Rural households below national poverty line (2006)     | 28% (India 18%)   |
| Agri' land distribution                                 | 78% holdings <1 hectare   |
| Agriculture/state GDP                                   | 40%   |
| Rural adult literacy – male                             | 58% (India 71%)   |
| - female  | 30% (India 47%)   |
| <b>Key VC initiatives</b>                               | <u>Facilitate</u>   |
| Bank linkage  | - Loan application and repayments   |
| Market support  | - Start independent marketing agents<br>- Contacts with corporate agents<br>- Alliance with dairy federation to market honey                                |
| Productivity & quality improvements                     | Training (govt linkage)<br>– basic beekeeping<br>– extraction of byproducts   |
| Formation & capacity building of community institutions | Formation of associatns/ state level federation<br>Collective marketing, training in business skills  |
| Promotion of other linkages                             | Establish honey processing plants, testing facility; production of beehive boxes, foundation sheets, small equipment  |
| Advocacy  | Lobbying to reduce tax<br>Publication of directory<br>Workshops for banksto increase flow of credit to beekeepers and VC links                              |
| <b>Target Population</b>                                | Marginal and small farmer households; backward castes (beekeeping)  |
| <b>Contribution to poverty reduction</b>                | More households engaged in honey production. Higher earnings. More hired wage employment, male. More employment in linked activities. Reduced outmigration. |

**Project context:** Bihar is the second poorest state in India, with the lowest per capita income (\$264) where 28% of rural households live below the national poverty line, (18% all India, rural).

**Project management:** The VC project has been managed by a team of 3-5 professionals under the aegis of for-profit social enterprise. EDA continues to facilitate the VC (albeit at a reduced level) even after the project closed in June 2008.

**Strategy:** Range of activities at all levels of the VC. Strategy of minimising grant support to producers and BDS providers. Benefits continue post-project.

**Project outputs:** Significant increase in productivity from 30kg to over 40kg per hive, even in a year of moderate productivity, and a substantial increase in the number of producers from around 1,800 to over 9,000.

**Linkages:** Both upstream and downstream linkages have been significantly enhanced. These include increased numbers of bee box suppliers, foundation sheet makers and brood suppliers and a better flow of credit to producers, on the one hand, and increased activity of market agents as honey buyers, on the other.

**Marketing:** Competition between buyers of corporate branded honey marketers as well as individual market agents (and the advent of a large marketing cooperative) has greatly enhanced choice for producers/sellers with the selling price of the product increasing from Rs30-35 in 2002 to Rs55-65 in 2008

**Producer institutions:** The organisation of as many as 45 producer associations in Bihar, represents a significant step forward for the VC project. The variable quality of these associations and the weakness of the beekeepers' federation is the result of the fragmented and feudal nature of society in the region.

**Contribution to poverty reduction:** Sample estimates – 80% beekeeper households report increase in income; 40% below '\$1/day' in 2002, reduced to 30% in 2008. (Non-beekeeper samples shows small increase in poverty from 38% to 44%). One third hire one full time employee for beekeeping. Another 7% hire seasonal labour. Wages at par with, or slightly above, local market conditions.

**Cost-effectiveness:** A five fold growth in producer numbers and 12 fold increase in production together with a 2.5 times increase in the price of honey results in a very low project cost (\$129) per beekeeper and very high B-C ratio of ~30 (based on a simple calculation). A more dynamic calculation using cash flows is to be done.

## B IHAR, INDIA

Bihar is a northern state of India, with a population of more than 90 million, of which 88% live in rural areas.

### Bihar State



Out of 28 states in India, Bihar is one of the least developed on all socio-economic indicators, with the lowest per capita income, the second highest poverty rate, and the lowest adult literacy rates – for both men and women.

| Development indicators                  | India | Bihar |
|---|-------|-------|
| Per capita income \$                    | 832   | 264   |
| <b>Poverty rate (Rural households):</b> |       |       |
| % below national poverty line           | 18%   | 28%   |
| % below '\$1/day' at PPP                |       | 45%   |
| <b>Adult literacy</b> - men             | 71%   | 58%   |
| - women                                 | 47%   | 30%   |
| Sex ratio                               | 933   | 921   |

National Economic Survey, 2008; National Sample Survey, 2006  
Census 2001

The honey value chain project is located in Muzaffarpur and adjacent districts to the north of the state capital of Patna.



## 1 Organisational background

### 1.1 History and Profile

EDA Rural Systems Pvt Ltd (EDA) is a development consultancy and livelihoods promotion organisation based at Gurgaon (outside Delhi), India. EDA was established in 1983; it has undertaken livelihoods research throughout India and been engaged in livelihood promotion activities across northern India from Rajasthan (state) to West Bengal. EDA has also provided management support to livelihood promotion programmes all over India, in Nepal, Bangladesh and Myanmar.

EDA's work in the honey value chain in Bihar started in 1998-9 with the mandate to implement the Rural Industries Programme (RIP) of the Small Industries Development Bank of India (SIDBI) in Muzaffarpur and Vaishali districts of Bihar state. The RIP is a programme to facilitate the flow of credit from commercial banks to local productive enterprises. EDA's participation in the RIP was focussed exclusively on the honey sub-sector for two reasons

- 1 Honey was a well known product of the region with distinct characteristics of flavour and colour that are well known and appreciated by consumers in Bihar and neighbouring states, if not nationally. The sub-sector, therefore, presented a significant opportunity for growth
- 2 EDA had previous knowledge and experience of the honey sub-sector, having undertaken studies and support activities for the sub-sector in the states of Uttarakhand, Karnataka and Maharashtra.

EDA first attempted to get support from SIDBI for a value chain initiative beyond the limited bank linkage activity of the RIP. Since SIDBI was unable to provide this support, EDA approached and obtained funding for this value chain initiative from The Ford Foundation.

### 1.2 Governance and Management

EDA is a private limited company engaged in research and consultancy in the fields of microfinance and livelihoods promotion including impact studies, evaluations, social research, market research and training of professionals.

Value chain promotion activities are undertaken by EDA's enterprise division led by its Director of operations, Ashok Kumar. He is supported by a Senior Executive and field teams in the clusters where the livelihood promotion activity is currently in progress. EDA's value chain promotion work started in the sericulture sub-sector in West Bengal in 1997. For five years, from 2000-01 to 2005-06, EDA was also engaged in the leather footwear value chain in Rajasthan – in Jaipur district and Ajmer. During this time, promotion of the honey value chain in Bihar

continued. Currently, EDA is most active with the vegetable value chain for small producers in one district of Bihar and three districts of eastern U.P.

## 2 The VC project for honey production

Muzaffarpur district in Bihar is well known for its *litchi* (or lychee) orchards. Litchi is a juicy fruit with a light, sweet flavour, ideal for honey production. Since the 1960s, there has been sporadic Government support (training in beekeeping, financial subsidies) to encourage rural people to start beekeeping. By 1999-2000 there were perhaps 1,800 households involved in beekeeping in the region, with relatively low productivity in honey production and seasonal honey sales dependent on the local agents of a single company, Dabur India Ltd, which processed the honey outside the region and thus added no value within the district.

EDA conducted a value chain assessment in 2000 which identified the following issues

- Beekeepers lacked knowledge of scientific bee management, disease control in bees, honey extraction methods, quality parameters in honey and hygienic storage of raw honey
- Beekeepers were dispersed, in small individual units. dependent on a few agents for the sale of raw honey
- Support institutions and government agencies were not proactive in their approach
- There was a lack of finance and bank credit for entrepreneurs for starting or expanding beekeeping
- There was little value addition in raw honey at the local level through processing.

**Table 1** sets out the specific tasks undertaken by the EDA livelihood promotion team in promoting the honey value chain in Muzaffarpur.

**Table 1**  
Activities by the EDA team to support the development of the honey value chain

| Components   | Major activities   |
|--|--|
| Training of bee-keepers  | Training by local experts with experience at RAU and as beekeepers <ul style="list-style-type: none"> <li>• Basic beekeeping</li> <li>• Extraction of by-products</li> <li>• Publication of a book in Hindi (local language) on how to start a bee-keeping enterprise</li> </ul>   |
| Finance  | <ul style="list-style-type: none"> <li>• Linking beekeepers, honey processors, honey traders and (later) the associations of beekeepers to local branches of (national) commercial and regional banks – State Bank of India and Vaishali Kshetriya Gramin Bank (Vaishali Regional Rural Bank).</li> </ul>  |
| Formation and capacity building of community institutions                | <ul style="list-style-type: none"> <li>• Mobilisation of bee-keepers to form associations and building their capacity</li> <li>• Formation of a state level federation of bee-keepers' associations</li> <li>• Encouragement of action by bee-keepers' associations to undertake collective marketing and address common business problems</li> <li>• Training of bee-keepers to develop entrepreneurial skills, cooperative management, book-keeping, conflict resolution and negotiation skills</li> </ul>   |
| Market development for raw honey   | <ul style="list-style-type: none"> <li>• Development of a strategic alliance between the bee-keepers' federation and <i>Timul</i> (also known as Sudha Dairy); encouragement to <i>Timul</i> to sell processed honey</li> <li>• Support for collective marketing of raw honey by associations</li> <li>• Promotion and development of local marketing agents (PMAs) and creation of the backward and forward linkages they need</li> <li>• Website development (<a href="http://www.litchihoney.com">www.litchihoney.com</a>) to increase the visibility of the sub-sector in domestic and export markets</li> </ul> |
| Promotion of related activities  | Facilitating the establishment of <ul style="list-style-type: none"> <li>• Honey processing plants and a testing laboratory</li> <li>• Related facilities such as beehive manufacturing, beehive foundation sheet making and small equipment suppliers</li> </ul>  |
| Advocacy for policies to create a positive environment in the sub-sector | <ul style="list-style-type: none"> <li>• Lobbying to reduce tax on the honey trade in Bihar</li> <li>• Publication of a bee-keepers' directory to reduce official harassment at police check posts during seasonal migration of bee hives to other locations (in search of additional sources of nectar)</li> <li>• Organisation of workshops for banks to encourage increased financing for bee-keeping enterprises.</li> </ul>   |

The objective of the VC project was to engage with different players in the value chain to make it more efficient and enable beekeeping enterprises to expand and benefit from the market, and to enable others to start beekeeping enterprises as a source of livelihoods.

The EDA interventions initially focused on mobilizing beekeepers and forming their associations, facilitating training on basic bee-keeping, and the development of bank and market linkages including the promotion of local marketing agents. These activities continued for three to four years and were carried out simultaneously. Other activities such as forming a federation of beekeepers' associations, promoting a strategic alliance between *Timul* and the bee-keepers' federation, the development and launch of the website, efforts to reduce tax on the honey trade, and publishing a beekeepers' directory were taken up from Year Three of the project (in 2004)

### 3 The honey value chain

This section provides a summary description of the main actors in the honey value chain (VC) identifying new players as part of the VC project (VCP) since 2002.

#### 'Upstream' actors

The principal actors in the honey value chain are the beekeepers. They keep domesticated bees in wooden hives or bee hives for seasonal production of honey and wax. Beekeepers are mainly from the community of *Kushwaha (Koeri)* (categorized by the Government of India as a 'backward caste'). They are small and marginal farming households (with less than 2 hectares of irrigated cultivable land). In 2002, the average bee colony holding of the ~1,800 beekeepers was 28 hives. Honey production was limited to a few months of the year, using mainly the pollen from litchi blossoms, and some from *Karanj* flowers (an oil seed crop). The extracted honey was sold in raw (unprocessed) form at Rs25-30 per kg, primarily to agents of Dabur India Ltd, a large food processing company which processed the honey in its own unit, based nearby in Nepal for packaging and sale throughout India, and for export.

Bee-keeper associations have been promoted as part of the VC project. There are now around 45 bee-keeper associations with over 2,000 members from about 150 villages. The first association was registered as a society (NGO) in 2004. The primary role of the associations is to support members through the collective sale of honey. Secondary support activities include: arranging transport of bee hives to other states, assistance in accessing bank credit and purchase of inputs. Some associations have recently started organising training programmes for their members. Charges for services are low, and are used to cover the costs. An honorary secretary keeps the accounts and takes the lead in

organising activities. Some associations pay the secretary a small honorarium.

A beekeepers' federation called Tirhut Honey Producers' Self Reliant Cooperative Federation was formed in April 2005 and registered in 2006. Its membership has grown from 9 associations in 2006 to 19 associations in 2008. Its objectives are

- to facilitate bank linkage of member associations
- to develop the market for honey
- to train and build the capacity of beekeepers
- to supply inputs to beekeepers in the region and other agencies outside the state
- to follow up with relevant authorities to enable the registration of beekeepers' associations
- to engage in policy advocacy, such as addressing the sales tax issue
- publication of a beekeepers' directory.

Overall, the aim is for the federation to assist associations in undertaking activities effectively for promoting the overall value chain, and addressing policy issues. The federation has also started to provide audit related services to its member associations.

The federation was quite active up to 2008, but since early 2008 has been largely unable to function on account of disputes within its governing body.

#### Mid and down-stream actors

- Corporate buyers of raw honey include Dabur India Ltd., which was active before 2000, and has since 2000 been joined by Kejariwal, Kashmir Apiary, Punjab Honey and Apis India. Corporate buyers undertake processing and marketing of processed honey either for the domestic market or for the international market. Another agency, linked to the government sponsored KVIC network is the local Gandhi Ashram which undertakes honey marketing along with the marketing of other village products.
- Honey processors: The processing of honey requires basic cleaning, usually by the beekeepers and more refined cleaning, and packaging by processors. Before the VC project, honey processing was done mainly by Dabur, outside the region. There are now a number of small local processing units, some of which have been promoted by the project. These buy honey from beekeepers and sell processed honey in the local markets or even to large honey buyers.
- Honey marketing agents: There are now a number of local entrepreneurs engaged in the purchase and trading of honey from village producers. These entrepreneurs are local marketing agents, who

came to be known to the project team as 'Professional Marketing Agents' - PMAs. PMAs developed by the project work differently from typical traders in that they provide immediate payment to beekeepers for honey, arrange every aspect of honey procurement including transport, and deploy trained staff in the field to interact with beekeepers. They also ensure payment according to the quality of honey.

- Marketing company (since 2005): *Timul* (Tirhut Milk Producers' Cooperative Union Ltd). *Timul* is a union of district cooperatives linked to the Bihar State Milk Producers' Federation, as part of the countrywide cooperative network promoted by the National Dairy Development Board. As a cooperative union, *Timul* provides marketing and processing facilities to village level milk cooperative societies and markets their milk and milk products throughout Bihar state and eastern India. As part of the VC project, EDA persuaded *Timul* to add honey to its product line.

### Service providers

- Providers of beekeeping inputs: include makers of wooden bee hives and wax foundation sheets; suppliers of bee colonies, and sellers of medicines for the control of bee diseases. Under the VC project, EDA identified several bee hive makers, provided training on how to approach new areas and beekeepers, the utility of keeping in touch with their clients, receiving regular feedback from them and facilitated bank credit to them.
- Banks: the branches of public sector banks and smaller regional banks that focus mainly on rural clients.
- Moneylenders: informal financial service providers are the main sources of credit in rural areas and usually offer credit to borrowers including beekeepers at a monthly interest ranging from 2% to 5% depending on whether or not there is collateral.
- Other service providers: include transporters, suppliers of tins for storing honey and tele-communications service providers amongst others.

### Other promotional institutions

- The Khadi and Village Industries Commission (KVIC) – provides occasional training to limited numbers of beekeepers. It also has a scheme under which a beekeeper can obtain a bank loan. The EDA project tapped into the KVIC scheme for facilitating credit to many of the beekeepers.
- National Horticulture Board (NHB): supports institutions such as the KVIC and RAU (see

below) in organizing training on beekeeping, providing bee colonies to trainees and support to beekeepers when they move their bee hives to other locations.

- The Beekeeping Centre of Rajendra Agriculture University, Pusa (RAU) – has a training and demonstration centre for beekeeping, offering training to a small number of people, usually 20-50 in a year, depending on the budget provided by the state government. The EDA project included this centre for disseminating technical knowhow to a larger number of beekeepers. RAU staff were also instrumental in making contact with experienced beekeepers and trainers in the region.

**Figure 1** (following page) maps the actors of the honey value chain with estimated numbers before the VC project (2002) and after (2008).

## 4 External context factors affecting the VC

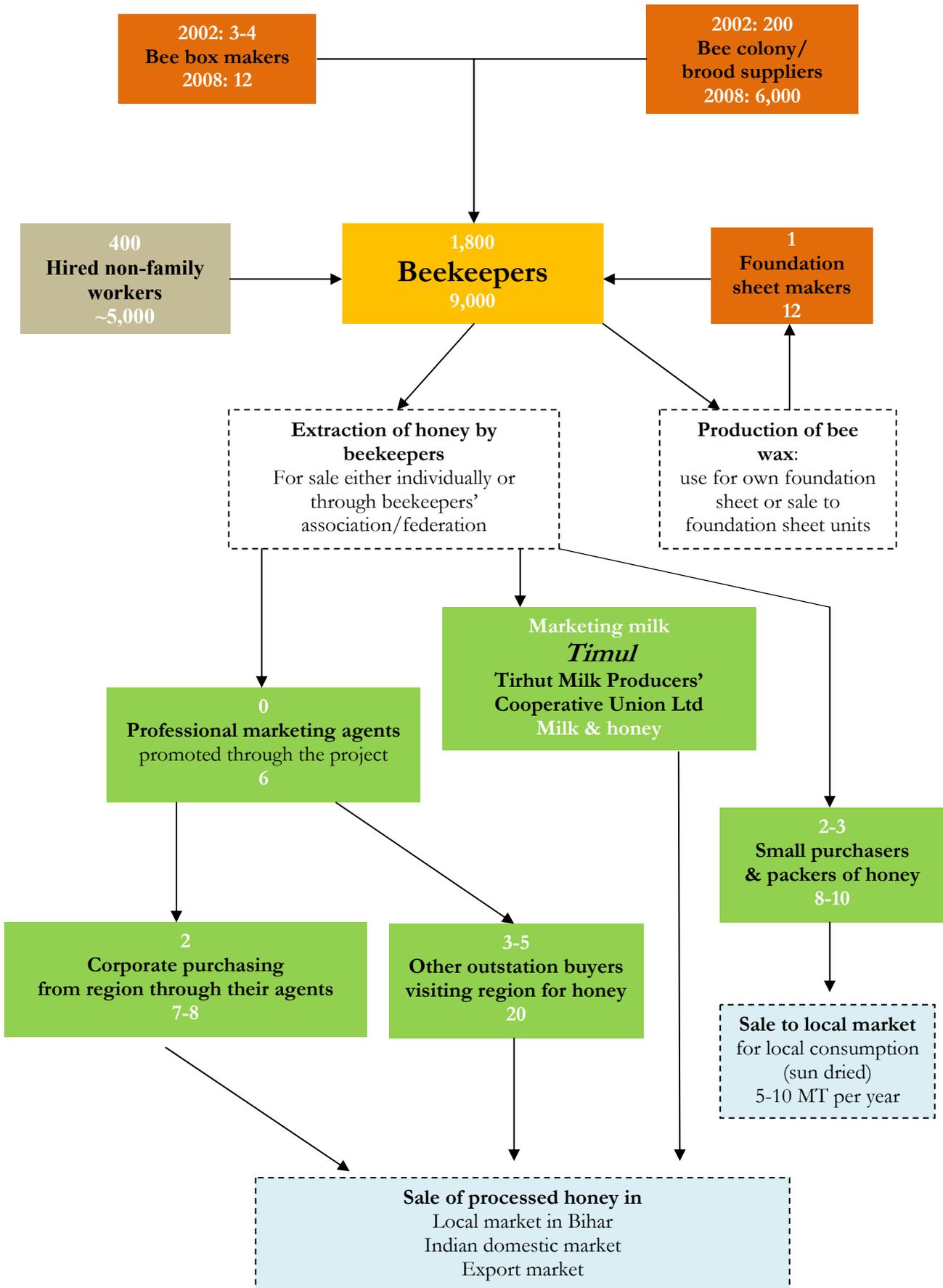
**Political legal context:** Beekeeping is a farm-based 'cottage industry', recognized by the Government of India as an important source of rural employment with an estimated potential of employing six million rural families, including tribal communities, who live in or near orchards and forests that attract bees.

Government support to beekeeping is the responsibility of the Khadi and Village Industries Commission of the Central Government with state level Khadi and Village Industry Boards (KVIBs) as promotional agencies. This support is in the form of training in beekeeping, subsidized loans and marketing of honey through the KVIC's shops. However, neither nationally nor at the state level, is the KVIC a particularly dynamic institution. In Bihar, the KVIB has provided sporadic training in some years, depending on the receipt of government funds for the purpose. If there are no funds, there is no training.

Corporate processors and traders are registered under the appropriate Food Act – and they also pay Value Added Tax (VAT) for trading outside the State. Small traders are not usually registered. In other States, apart from Bihar, honey was classified as agricultural produce and exempt from sales tax and VAT. In Bihar, honey was not so classified, and attracted 8% sales tax, increased to 12.5% as VAT from April 2005. This placed honey producers at a price disadvantage vis-a-vis those in other parts of the country – especially other states in northern and eastern India.

Beekeepers in Bihar can be harassed by forest department officials when they move their bee hives in different seasons by truck, across state borders. Legally, they are not liable to any taxes, nevertheless the officials ask for bills of suppliers from whom the wooden bee hives were purchased.

**Figure 1**  
Map of the Honey Sub-sector in the Muzaffarpur region  
Summary Outputs of the Honey VC Project 2002-08



Since the trading system is largely informal, usually beekeepers do not have such bills and forest officials extract money on the grounds that the hives have been made illegally out of forest wood. Police at the check posts also harass beekeepers by saying that they do not have a permit to enter another state, though legally no permits are required for moving bees. The police can hold the trucks for hours. Since prolonging the journey is harmful for the bees, the beekeepers feel obliged to pay up and move on. The situation has been extremely bad, but better governance in the state has contributed to an improvement in the past few years.

**National/international market:** India produces around 70,000 metric tonnes (MT) of honey a year<sup>1</sup> – 10,000 MT is forest produced while the rest comes from apiaries – or bees which are ‘cultivated’ in bee hives kept close to the crops that provide nectar suitable for bees to feed on.

Traditionally, honey consumption in India is associated primarily with medicinal and religious uses, rather than as a food, and this explains the low unit consumption levels. Around one-third of Indian honey production is exported. There is a growing demand for honey in the international market with world honey consumption increasing to over a million metric tonnes a year. India’s honey exports are mainly to the USA and to Germany. Demand for honey from India is very high in the USA which leads the world in honey consumption and may soon surpass Germany to become the leading net importer of honey in the world<sup>2</sup>. China is a major exporter of honey, and is the main competitor to Indian honey in the world market.

Prospects for honey in the domestic and inter-national markets are positive due to growing consumer awareness of its nutritional benefits as a natural food, as well as its medicinal and cosmetic value.

**Local market:** Honey production in Bihar is around 17,000 MT annually. Almost all of this is from non-forest apiaries. EDA’s own estimates are that 50% of the honey produced in Bihar is litchi honey (9,000 MT), 35% mustard honey (about 6,000 MT) and 15% comes from other sources of nectar (2,000 MT) mainly from trees such as *jamun*, *sahjan* (drumstick), eucalyptus, and *neem*.

Litchi honey is unique, recognized for its aroma and quality. It can therefore command a premium in the market and is usually sold at a higher price than other types of honey, especially forest based. As a result, honey processors usually blend litchi honey with other types to improve the taste of blended honey.

Before the start of EDA’s honey VC project, there were only a handful of local traders in Muzzafarpur who procured honey on commission for the Dabur company. With no other significant buyer the beekeepers had little bargaining power and had to sell honey at whatever price was offered to them. There was also a time lag of 2-4 months in obtaining payment for the honey supplied.

## 5 Outputs of the VC programme

**Production:** There are now some 9,000 beekeepers, managing colonies of, on average, 44 hives. Honey extraction is 45 kg per hive per year compared to the national average of 20 kg.<sup>3</sup>

**Trained beekeepers:** Nearly 4,000 beekeepers (including around 200 women) have been trained particularly on bee hive management, disease control and opportunities to transport bee hives to different regions so as to maintain year round production.

This has resulted in an improvement in the quality of honey reaching the market through more careful extraction, greater attention to protection from impurities and reduction of moisture.

**Producers’ organisations:** Some 2,000 beekeepers have formed 45 associations and a federation of 19 associations in the region. The VC initiative provided training to the office bearers (2-3 per association) on accounts and book keeping for the associations. EDA’s staff worked with the associations to support their management of activities such as training, credit linkage and marketing organised by the latter.

**Trading:** A number of local entrepreneurs with good business and financial backgrounds were identified and approached by EDA. Meetings were organised and the potential of the honey trade was explained to them. Out of 25 entrepreneurs who attended these meetings, 6 agreed to enter the business. These six local traders (known as Professional Marketing Agents) have developed their own links with honey buyers from outside the state.

EDA linked a number of other corporate and institutional buyers with Muzaffarpur and, as a result, the market choices available to beekeepers have increased and gradually their bargaining power with honey buyers has strengthened.

**Consumer marketing:** *Timul*, the milk marketing co-operative in the region has now become a key buyer in the honey market. So far *Timul* has not bought large quantities, but the knowledge that it has entered the market, and is planning to expand its role, has played a major part in establishing and maintaining higher

<sup>1</sup> There is limited data on honey production in India. These estimates are from around 2005

<sup>2</sup> [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/sis967](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/sis967)

<sup>3</sup> State Beekeeping Extension Centre, Khadi & Village Industries Commission, Bihar State Office, Patna.

prices. *Timul* is also an ideal buyer because it is a member-owned institution whose main objective is to protect the interests of its producers. It is part of the National Dairy Development Board family of institutions, which have spearheaded India's emergence as the world's largest milk producer, almost entirely from small-scale village producers.

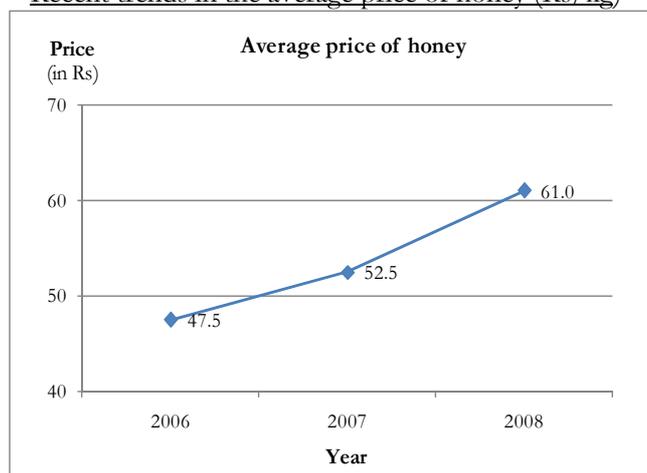
Honey was an unfamiliar product for *Timul*, but the principle of providing organised processing and marketing for small honey producers is the same as in the case of milk.

**Pricing:** The price of honey received by beekeepers has increased significantly since the beginning of VCA, with continuing increases in the past few years supported by the federation, with the help of *Timul*. The price offered by the federation with the help of *Timul* has come to be seen as the support price for litchi honey usually followed by the other buyers.

The price of raw litchi honey in April 2005 was quoted by the agents of corporate buyers as Rs18 per kg, but after the federation announced its purchase price of Rs45 per kg, the agents increased their prices to Rs36 per kg, and the market price gradually rose to over Rs45 per kg. In 2006, the agents quoted Rs38 per kg for raw litchi honey, whereas the federation with the help of *Timul* offered Rs51 per kg. The agents were again forced to increase their prices and, as a result, the beekeepers eventually received Rs 55-60 per kg for their best quality honey.

**Figure 2**

Recent trends in the average price of honey (Rs/kg)



**VAT:** This was reduced to 4% – effective from 1st April 2006 – following a VAT study by EDA under the VC project, a representation by the honey federation to the VAT *panchayat* headed by the Deputy Chief Minister of Bihar, and subsequent letters sent by the honey federation and *Timul* to the Chief Minister, Deputy Chief Minister, Secretary, Commercial Taxes and other relevant authorities. The reduction in tax paid by the buyer can be passed on in better prices to the beekeeper.

## Assessing the effects of the VC initiative

Changes resulting from the VC initiative have been assessed through Key Informant Interviews, Focus Group Discussions and a small sample survey. Sample numbers are very small, since the methodology was under pilot. Findings are therefore indicative.

- 1 Household survey of a random sample of beekeepers in 14 villages of Muzaffarpur district, stratified by size of beekeeping unit – 40 beekeeping households were interviewed.
- 2 Interviews with a control group of 10 local farmers as non-participants in the value chain.
- 3 Interviews with other actors in the value chain including midstream actors (marketing agents, beekeepers' associations, their federation and the marketing company, *Timul*).
- 4 A few hired wage workers were also interviewed – though the number was limited since field work coincided with transport of bee boxes outside the area.
- 5 Focus Group Discussions (FGDs) with beekeeper members of the associations to validate the survey findings and fill information gaps on outcomes (incomes, asset building and resilience)
- 6 The Progress out of Poverty Index (PPI) was used as a quick tool to benchmark household poverty levels to the India national poverty line and the international poverty lines (\$1 a day and \$2 a day at purchasing power parity). The PPI was applied at the household level to beekeepers, wage workers and non-participants. (The PPI is a practical tool to assess poverty level, but it requires a larger sample than is covered in this pilot to arrive at a meaningful confidence level).

Changes have been assessed between the base year and Year 2008. The base year is 2002 (when this VC initiative began) for (18) households who started beekeeping in 2002 or before, while it was the year of starting beekeeping for (22) households who started after 2002.

**Table 2**  
Pilot sample

| Respondents                                     | Number |
|---|--------|
| <b>Household questionnaires:</b>                |        |
| VC-participating beekeeping households          | 40     |
| Wage workers employed in beekeeping enterprises | 4      |
| Comparison households – non-beekeepers          | 10     |
| <b>Key informant interviews:</b>                |        |
| Input providers (wooden beehive makers)         | 2      |
| Professional marketing agent                    | 1      |
| Milk Marketing Coop. ( <i>Timul</i> )           | 1      |
| Beekeepers' associations                        | 3      |
| Beekeepers' federation                          | 1      |
| <b>Focus Groups:</b>                            |        |
| Beekeeper associations                          | 3      |

## 6 Changes for beekeeper households

The first part of **Table 3** (below) gives the distribution of the survey sample by size of enterprise in terms of the number of hives with a fairly even distribution across the three size categories.

The rest of the table summarises the changes in relation to the ‘five capitals’.

**Table 3**  
Summary of changes under 5 capitals

| Sample households                                       |                  |             |
|---|------------------|-------------|
| Number of hives   | Base year        | 2008        |
| <=25  | 28               | 14          |
| 26-50   | 7                | 14          |
| >50   | 5                | 12          |
| <b>Natural capital</b>                                  |                  |             |
| <b>Access to orchards, % of sample</b>                  |                  |             |
| Increased   |                  | 94.4        |
| No change   |                  | 2.8         |
| Decreased   |                  | 2.8         |
| <b>Bee-hive productivity, % of sample</b>               |                  |             |
| Increased   |                  | 57.5        |
| No change   |                  | 20.0        |
| Decreased   |                  | 22.5        |
| <b>Human capital</b>                                    |                  |             |
| <b>Increased beekeeping skills from VCA training, %</b> |                  |             |
| Disease control   |                  | 70.0        |
| Storage of honey  |                  | 42.5        |
| Extraction of honey                                     |                  | 35.0        |
| Honey quality control                                   |                  | 20.0        |
| Bee breeds  |                  | 10.0        |
| <b>Physical capital</b>                                 |                  |             |
| <b>Bee hive number over base year, % of sample</b>      |                  |             |
| Increased   |                  | 77.5        |
| No change   |                  | 2.5         |
| Decreased   |                  | 20.0        |
| <b>Purchase of honey extractor</b>                      |                  | 62.5        |
| <b>Social capital</b>                                   |                  |             |
| <b>Member of producer association</b>                   |                  | 72.5        |
| <b>Number of buyers, % of sample</b>                    |                  |             |
| Increased   |                  | 55.0        |
| No change   |                  | 27.5        |
| Decreased   |                  | 17.5        |
| <b>Financial capital</b>                                |                  |             |
| <b>Honey income/ household income, # HHs</b>            | <b>Base year</b> | <b>2008</b> |
| >75%  | 9                | 10          |
| 50-75%  | 6                | 19          |
| <50%  | 25               | 11          |
| <b>Income from beekeeping, % of sample</b>              |                  |             |
| Increased   |                  | 80.0        |
| No change   |                  | 2.5         |
| Decreased   |                  | 17.5        |
| <b>Credit</b>   |                  |             |
| Bank loan – for beekeeping                              |                  | 42.5        |
| Applied for bank loan – waiting                         |                  | 5.0         |
| Would expand beekeeping if had credit                   |                  | 45.0        |

- Beekeeping is an important and increasing source of cash for the household – over half the total household income for 29/40 families. Other sources of cash income are sale of agriculture related products (65% of the sample), dairying (38%) or other employment (15%).
- 78% report an increase in the number of hives and 58% report a significant increase in productivity per hive of honey. Migration of hives to other states for better access to nectar is undertaken by 30 of the 40 beekeeping units. Some beekeepers report that local productivity has declined on account of the increase in concentration of hives despite the increase in litchi orchards in the region. Those who do not move their hives are essentially those who have lost interest in the activity for various reasons.
- 80% of households report an increase in income from beekeeping with two-thirds having more than doubled their incomes from beekeeping and more than one-third having increased beekeeping income by five times or more. All those whose incomes have gone up have increased their numbers of hives gradually over the years.
- 20% who reported a decline or no change have lost hives due to floods or disease and were not able to raise the capital to buy additional hives.

**Women’s involvement:** North Bihar is a very patriarchal society. Rural women have limited mobility, and practically no direct access to earning or spending money for which they traditionally depend on the men in their families. It is often perceived as unsafe for women to go out alone even to the nearest town. They are heavily engaged in domestic and household based activities. This includes contributing significantly to agriculture and beekeeping. When the bee hives are placed near their homes, women help to manage the bee colonies, including feeding sugar in the off-season and in honey extraction. And they manage the storage of honey after extraction. Women are not involved in ‘outside/public’ activities - moving bees to different places, nor in the marketing of honey.

Nineteen women of the surveyed families had attended beekeeping training in beekeeping under the VC project. They felt that they had been able to contribute to an increase in household income from beekeeping.

### 6.1 VCP contribution to change

- **Access to bank loans:** Of the 40 beekeepers surveyed, 17 had obtained bank loans of Rs15,000-75,000 at 8-11% pa interest from local banks. Another 18 expressed the need for more capital to

expand their enterprises while 23 of the beekeepers had loans outstanding to moneylenders for seasonal enterprise requirements. In the context of EDA's long engagement with the bank linkage component, just 43% of beekeepers with bank loans when another 45% express the need for more capital seems relatively low. This appears to be on account of a patchy commitment by banks to enterprise lending at the village level.

- **Skill transfers:** Over half the respondents (including women) said they had improved their skills in beekeeping management and disease control as a result of training received under the project; and had been able to improve methods of honey storage, quality control, extraction techniques and bee breeding. However, 30% of respondents felt they needed more training in disease control. 38% reported loss of hives due to disease. Knowledge of selection of nectar sources (orchards), transporting bees and information about input providers was transferred within the peer group.
- **Marketing and relationship with buyers:** Over half of the beekeepers confirmed that they sell or have sold honey through their respective associations and that this collective marketing had increased the honey price. For 22 of the beekeepers the number of buyers had actually increased while for 7 this had gone down. Twentyfive beekeepers said that prices and speed of payment have improved with the recovery period reducing to 15-30 days from 2-6 months earlier. Only one still experiences delays. Some complained that prices were still not high enough to cover the rise in seasonal costs of inputs and the transport of bee hives. The favourable trend is largely attributable to an increase in bargaining power and competition amongst buyers as well as an improvement in quality and storage techniques enabling beekeepers to withhold their produce for longer periods of time in order to get a better price. This was corroborated by the associations and discussions at FGDs.

## 6.2 External factors contributing to change

- **Improved governance and infrastructure:** There has been an improvement in roads, and reduced official harassment during the migration of hives. Both of these reflect better governance in Bihar (following a change of State government). though reduced harassment may also be related to pressure from the VC project and associations on the state administration.
- **Climate extremes:** There were severe floods in the Muzaffarpur region during 2004. This led to the loss of hives for 15% of the sample.

- **Access to inputs:** Local traders have seen the fast growth of the sub-sector and have responded to it. Around 40% of beekeepers reported that medicines for disease control are now more easily available than before. Some (23%) felt that input quality had improved though most felt it was unchanged and 46% felt that the quality of bee boxes had declined due to the use of inferior quality wood.
- **Use of informal financial services:** Beekeeping income is seasonal, resulting in a negative cash flow during July-September when bees are fed sugar syrup (costing ~Rs450 per hive per season) to substitute for nectar that is otherwise unavailable. The alternative of migration is also costly. About half the beekeepers take cash advances from buyers to cover costs. The effective cost of trade credit is high since the price paid by creditor-traders is reduced. Beekeepers may take loans at 36%-60% per annum from moneylenders. The other half of beekeepers report no advances.

## 6.3 Livelihood resilience/security

**Overall well-being:** Thirty of the 40 beekeepers sampled reported an improvement in household status over the base year while 5 reported a deterioration (and 5, no change). Those who had deteriorated had experienced a decline in beekeeping income.

**Increase in assets:** Twentyeight of the beekeepers had purchased significant assets since the base year – improving houses or purchasing assets such as TVs, fans or sewing machines. A quarter purchased productive assets such as milch animals, tools or even irrigation pumps or agricultural land to help diversify incomes. These purchases were mainly from honey income, though ten reported using other sources such as income from farming or loans. The comparison group's household assets were largely unchanged over this period.

**Credit:** Whilst some business needs are beginning to be served by bank credit, over half the beekeepers continue to borrow from moneylenders – mainly to cover large household expenses such as weddings or funerals, and sometimes to cover seasonal enterprise costs, such as the transport of bee hives.

Outstanding loans to moneylenders, at the time of the field visit, averaged Rs42,000. This compares with an average Rs25,400 for bank loans (**Table 4**). Though, respondents said that their dependence on moneylender loans has reduced, with mostly smaller loans than before.

**Table 4**  
**Household indebtedness**

|                      | <b>Banks</b>      | <b>Moneylenders</b>                              |
|----------------------|-------------------|--|
| Beekeepers borrowing | 40.0%             | 47.5%  |
| Average outstanding  | Rs25,000<br>\$530 | Rs42,000<br>\$875                                |
| Purpose of loan      | Enterprise        | Marriages,<br>death,<br>transport of<br>beehives |

Note: 8 have both bank and moneylender loans

Most households said that their outstanding debt was less than half their annual income. However, three said they owed more than two years' income.

By comparison, three of the non-beekeeper families had outstanding debt to moneylenders – of around Rs25,000, at up to 60% interest. These were mainly for household use – such as for a wedding, or to cover up banana harvest loss. None of the comparison group had bank loans.

**Migration:** Eighteen of the forty sample households reported that before the EDA VC project, someone in their family had to migrate for work to other states. They would work as labourers in factories or as domestic help for a couple of months or at most a year at a time before returning home. Currently, none of the sample households are sending a family member outside the state for work.

**Basic needs:**

*Food shortage is less of a problem, but over half the sample report it continues:* Periods of food shortage have been a problem for beekeepers in the past. Fifteen reported facing food shortages no longer. However, 22 still face periods when food is short. For 8 households (20%), food shortage is more of a problem, since their beekeeping enterprise has not flourished, due to bee disease, floods or accident.

*Able to afford medical care:* Thirty beekeepers can now afford better healthcare for their families compared to the base year. Seven had seen no significant improvement, three were in a worse situation than before.

*Children are being sent to private schools:* Almost all children of school going age in beekeeping households are going to school. In one household, a son had been taken out of school and sent to work. The major change on education emerging from the FGDs, is that the beekeepers can afford to send their children to private schools, considered to be better than government schools, and to pay for extra tuition for them – investing in the future.

**7 Hired employment in beekeeping**

Beekeeping is a household or family based activity, but beyond a certain scale (on average 50 hives depending on family size), beekeepers may hire non-family male workers on a wage basis. This is either full time to help in managing the colonies and in moving hives or part-time during honey extraction.

In 2008, 16 beekeepers employed workers. This was usually one person per beekeeper, and two workers in two of the largest enterprises where the beekeeper has a large landholding to look after. This compares with five households which employed workers in beekeeping before the VC intervention.

Thirteen now employ full time workers with monthly payments ranging from Rs1,500-3,200 while the remaining three beekeepers employ 2-3 seasonal labourers each with payments ranging from Rs80-120 per day. These rates compare with average monthly income for labourers in rural Bihar of about Rs1,500. The rural minimum wage fixed recently under the State Government is Rs121 per day. In general, minimum wages are largely ignored and, as of 2008, male labourers are paid Rs100 per day in Bihar. Thus payments to wage labourers in beekeeping are at par, if not slightly above local market conditions – and have increased over time in line with market trends. In terms of working conditions, these are the same for both entrepreneurs and workers.

Two beekeepers had reduced the wage employment offered. The net change in employment since the VC intervention has been from 8 in the base year to 19, including 6 seasonal workers, in 2008. This sample data thus suggests that indirect employment in the sector is equivalent to just under half the total number of households managing a beekeeping enterprise, or a third more in terms of full time indirect employment.. Those beekeepers who do not employ labour, even at a larger scale of over fifty hives prefer to enter into partnerships with fellow beekeepers, instead of employing workers to help migrate hives to neighbouring states whenever they themselves are unable to go. This strategy to reduce labour cost was found among many of the large beekeepers.

There has also been **some upward mobility** with two previous wage labourers becoming beekeeper entrepreneurs. Both of these felt they had the skills and the contacts to become entrepreneurs: one was successful, and now employs another labourer. The other has lost income, due to loss of bee colonies on account of disease.

## 8 Benchmarking poverty

The Progress out of Poverty Index (PPI) has come to be regarded as a good way of benchmarking poverty levels for those regions where such an index has been established. Though the margin of error for the small samples used for this study is high (20%), **Table 5** provides an indication of poverty levels.

As the table shows, 40% of the beekeeper sample were below the \$1 a day poverty line in the base year (2002), indicating substantial poverty outreach, but lower than the general poverty rates for rural Bihar. For 2008, there is a slight reduction in poverty rates for the beekeeper sample vis-a-vis all the reference poverty lines indicating a poverty reducing impact of the VC initiative. By comparison, non-keepers actually reported an increase in poverty levels over the period.

**Table 5**  
Poverty benchmarking

| Poverty lines     | National | % below poverty line |     |
|-------------------|----------|----------------------|-----|
|                   |          | ‘\$ a day’ at PPP    |     |
| Samples           |          | One                  | two |
| 2002 Rural Bihar  | 37       | 47                   | 94  |
| Beekeepers        | 25       | 40                   | 91  |
| Non-keepers       | 22       | 38                   | 92  |
| Rural Bihar, 2006 | 28       | 45                   | 95  |
| Beekeepers 2008   | 19       | 31                   | 85  |
| Non-keepers       | 29       | 44                   | 93  |

Most of the comparison group agreed that the beekeeper sample had been able to improve their condition substantially, doing better than they themselves had managed. As one man remarked *‘People who were the same as me five years ago have managed to earn a lot through beekeeping. One relative of mine now has 300 hives. Earlier he was worse off than me.’* It was lack of capital and lack of manpower that, for them, had been obstacles to starting beekeeping.

## 9 Linked enterprises

### 9.1 Upstream enterprises

**Bee hive makers** are carpenters, mostly from the artisanal caste "Barhat" or other 'higher' caste. EDA estimates that there are 12 such carpenters now making bee hives in the region. There is no information as to how many were engaged in this work before the VC initiative, but given the greatly increased numbers of beekeepers this activity must also have grown substantially. They generally employ 4-6 young male workers, usually full time. Thus there will be about fifty workers in these 12 units. During September to April, they focus exclusively on bee hive making but during other months they also make other household furniture items. The wages of workers in these enterprises are in the range of Rs100-200 per day depending upon their skill level.

The survey covered two beehive makers in Muzaffarpur district associated with the VC project – who attended training and obtained bank loans (Rs25,000 each). **Table 6** summarises their reported changes in production and net revenue. Both bee hive makers have increased production substantially – responding to increased demand for bee hives as the activity has expanded under the VC project. Average revenue per hive has declined, but the increase in net revenue is at least 3 fold. Both bee hive makers had increased the number of wage workers they employ.

Bank credit was used as working capital for the wood used to manufacture bee hives and frames. One hive maker had also borrowed a much larger sum from a moneylender at 48% interest, partly to invest in a mechanical wood cutter.

**Table 6**  
Bee hive makers: increase in production and income (2002-8)

| Bee hive maker | Units sold |       | Net Income, Rs |         | change in income |
|----------------|------------|-------|----------------|---------|------------------|
|                | 2002       | 2008  | 2002           | 2008    |                  |
| One            | 194        | 1,818 | 58,300         | 272,700 | 468%             |
| Two            | 125        | 550   | 22,500         | 82,500  | 367%             |

### 9.2 Midstream enterprises

**Honey marketing agents:** Ajay Kumar was one of the honey marketing agents or 'professional marketing agents' (PMAs) under the VC project who have been promoted by EDA. Ajay ran a small sawmill. He had a good financial background, sound business acumen and was willing to take risks. After attending several honey buyer-seller meets organised by EDA in Muzaffarpur, he decided to enter the honey trade. He himself visited potential bulk buyers in South India. As initial start-up capital he was assisted in getting a loan from UCO Bank a public sector commercial bank. Since 2003-04, Ajay has been buying honey from beekeepers in Muzaffarpur, Samastipur and Motihari districts of Bihar and selling it to various buyers. He is now one of the leading PMAs in the region. His annual sales volumes are given in the table below.

**Table 7**  
Marketing agent: Increase in honey sales (2003-2008) in metric tonnes

|               | 03-04 | 04-05 | 05-06 | 06-07 | 07-08 |
|---------------|-------|-------|-------|-------|-------|
| Quantity sold | 80    | 200   | 250   | 300   | 600   |

Ajay has supplied to large buyers such as KVIC, Kashmir Honey, Bombay Honey and Kejrival Enterprises. However, now he sells only to two

customers, Pioneer Food and Agro Industries Ltd and another client in Mumbai as he gets the highest price from them. He sold 600 tonnes of honey in 2007-08 at around Rs70 per kg – a turnover of approximately Rs42 million from the honey trade.

Ajay reports that although his margins have remained roughly constant, his profit has gone up greatly due to increased volumes resulting from increased production of honey in the region. His share in the total honey trade in Muzaffarpur has not increased substantially due to the entry of others into the trade. Ajay discussed with the survey team some of the pros and cons of the project as well as external factors that have affected his honey trading business. The training in beekeeping which he received from EDA in 2003 taught him to identify the qualities of honey. He now offers a higher price for honey with lower moisture content. The reduction in tax on the honey trade facilitated by the project has meant that his margins are not squeezed as before. The project has also introduced him to bulk buyers of honey besides helping him to get a loan as initial start-up capital.

An external factor that has helped is the construction of new roads to villages in the region – part of infrastructure development in the State. This has ensured that he can now reach beekeepers in remote locations. However, collective marketing by beekeepers through their associations and the federation has meant that PMAs like Ajay now have to pay a higher price for procuring honey thereby reducing his margin.

Besides his honey trading business Ajay sold 2,000 bee colonies to the state Government of the neighbouring state of Madhya Pradesh. He is now planning to bid for a contract to supply bee colonies to the Maharashtra state government. The EDA project team played a key role in passing on useful information to him about these large potential buyers of his bee hives. With a margin of around Rs150 per hive, he earned an income of approximately Rs300,000 in 2008 from selling bee colonies alone.

Ajay also has a flourishing beekeeping operation. He currently owns around 450 bee hives; the business is managed by his brother. The training he undertook in 2003 has proved useful in establishing and operating his beekeeping business.

Today Ajay employs around 30 people for his honey trade, timber and beekeeping enterprises combined. In 2008, he had a turnover of around Rs45 million from all his business activities including honey trade earning a net profit of over Rs4 million.

## **Tirhut Milk Producers' Cooperative Society (Timul)**

EDA identified *Timul* as an ideal marketing partner whose 1,000 milk sale parlours could be used to sell honey in local markets. EDA approached *Timul* and suggested that they add honey to their product line. Beekeepers are often from the same villages where *Timul* procures milk and many are already supplying milk to it. By buying their honey *Timul* could help them diversify and improve their livelihoods.

After two years of negotiation a formal agreement was signed between *Timul* and the beekeepers' federation in 2005, in which the latter agreed to supply *Timul* with processed litchi honey. *Timul* offered a good price for the honey and, by opening up an additional marketing channel, this protected the beekeepers from being exploited by agents. The by-laws of *Timul* were changed to incorporate honey in its list of product offerings. In 2005-06, the first year of collaboration, when the federation bought 41 tonnes of raw honey from the associations and sold the processed honey to *Timul*, the beekeepers were paid by the federation through their respective associations and an additional Rs21,000 was paid to each association as an incentive to continue the business.

The collaboration between the beekeepers' federation and *Timul* helped in significantly reducing the exploitation of beekeepers. The effect of the collaboration on the price of honey was discussed in **Section 5** (above). In 2008, however, *Timul's* partnership with the federation met with various problems which resulted in *Timul* stopping procurement. This was first because the federation almost stopped operating due to an internal dispute between its office bearers, and second, because problems arose from the loss of a significant amount of honey due to crystallisation in storage, making it difficult for *Timul* to sell it.

Despite the temporary hiccup *Timul* once again plans to start procuring honey from the federation when the latter becomes functional. *Timul* is also in the process of setting up its own honey processing plant at an approximate cost of Rs3 million. The plant should be operational by June 2009. Once it is fully operational it should process around 3 tonnes of honey daily. A fully equipped quality control laboratory is also being set up at a cost of about Rs750,000. Funding for the processing plant and laboratory is being covered jointly by *Timul* and the KVIC in the ratio 1:3. *Timul* also plans to work more closely with the beekeepers and to offer them training and capacity building services for developing awareness of marketing and quality control.

## 10 Downstream – Producer organisations

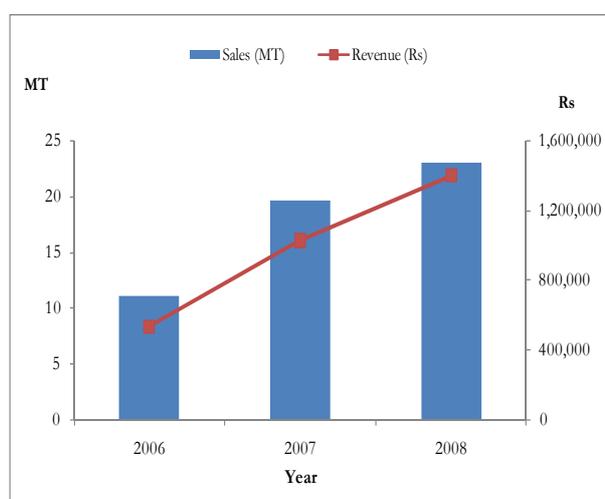
The field work covered three beekeepers' associations and the federation.<sup>4</sup> Just under half of the total beekeeper households in the surveyed villages are members of an association.

### Beekeepers' associations

**Figure 1** (in **Section 5**) shows the average price received by the surveyed associations on a year-on-year basis starting from 2006 when the associations started to sell the produce of their members collectively.

**Figure 2** shows increasing sales by the associations.

**Figure 2**  
Honey sales and revenue – 3 associations



In Focus Group Discussions, association members, attributed these positive trends to the following:

First, (social capital) collective marketing through the association has increased the bargaining power of beekeepers who were previously operating alone.

Second, (human capital) training received by the beekeepers from agencies such as EDA and KVIC have taught them production techniques for higher productivity and better quality honey. They have also learned how to store honey for longer periods. This has enabled them to negotiate with potential buyers until they receive the right price without the fear of the honey quality deteriorating.

Thirdly, there are now more buyers in the market, with the price level set by *Timul* being followed as a floor price by other buyers.

Other points emerging from the discussions included:

<sup>4</sup> The methodology for value chain assessment recommends analysis of the 'five capitals' at the level of an 'upstream enterprise'. These honey producer organizations could be counted as such, but as diverse representative associations, they were not a main focus of the VC initiative in terms of impact, though they are important in terms of service provision.

- Meetings take place monthly to discuss beekeeping techniques, disease control, pricing and other issues related to the transfer of bee hives
- Two out of the three associations has a system of loans to individual members.
- There have not been any dropouts, either voluntary or pushed.
- One association conducts annual seminars where guest lecturers are invited to talk about beekeeping methods, new diseases and their prevention.

Overall, members felt that the formation of associations had improved their bargaining power leading to higher prices. Delays in payment have also been significantly reduced with immediate cash payment now being obtained in most cases. Knowledge sharing amongst members at meetings on issues of beekeeping, disease control and hive transfer have proved to be quite useful. A general feeling of enthusiasm and willingness to help each other has also been generated amongst the association members.

The three associations have quite different financial transactions with its members:

- Annual membership fees Rs360, Rs600, Rs1,200. Membership fees are fixed by the associations based on their members' willingness to pay on the principle of revenue maximisation.
- One association charges its members a commission of Rs0.50 per kg of honey sold, as a means of generating additional revenues. The other two had no such system in place nor had any plans to introduce anything similar in the near future.
- Two associations provide credit, one up to Rs3,000 at 24% interest; the second up to Rs15,000 at no interest.

Financial data available from the accounts of the three associations is summarised in **Table 8**.

**Table 8**  
Financial data for 3 beekeepers' associations (Rs)

| Beekeepers' Associations | Annual honey sales | Cash in bank | Other assets | Annual expenses |
|--------------------------|--------------------|--------------|--------------|-----------------|
| Madheiya                 | 1,200,000          | 16,000       | 33,000       | 2,000           |
| Raghavpur                | 870,000            | 55,000       | 0            | 4,500           |
| Purusottampur            | 530,000            | 60,000       | 30,000       | 24,000          |

The assets column shows the outstanding loan portfolio to members in two associations. The associations have no other assets such as vehicles, furniture or storage facilities for honey. Annual expenses are relatively low, being mainly audit fees, expenses incurred on meetings and occasional seminars. The Purusottampur association also incurred expenses on transporting honey to a buyers' collection point, hence incurred higher expenses.

## Beekeepers' federation

It played a key role in helping to reduce the tax on honey in Bihar. A representation from the federation with support from the Bihar Traders' Association went to the VAT *Panchayat* headed by the Deputy Chief Minister of Bihar.

However, since early 2008 the federation has been largely unable to function. This happened due to the complete breakdown of the working relationship between the federation's President and CEO. The latter was subsequently dismissed due to the alleged misuse of the federation's funds. In the absence of a top official, the federation was unable to undertake promotional activities and failed to honour its contract of supplying *Timul*.

Despite the federation's inability to function in recent months it was an important actor in the honey value chain often working as a link between the beekeeping associations and large buyers. During the first year of collaboration with *Timul*, the federation bought around 41 tonnes of litchi honey from the associations at Rs45 per kg and after getting it processed, sold it to *Timul* at Rs60 per kg. In the 2<sup>nd</sup> year, the federation supplied *Timul* with around 34 tonnes of processed litchi honey. The buying price was Rs55 per kg of raw honey, and the selling price was Rs68 a kg for processed honey.

Despite its problems the federation was able to bring in ten more associations as its members. Efforts are being made by the federation to recruit a new CEO but these are hampered by the current disputes amongst the members of its board. The federation plans to work with more buyers in the future. Efforts are also underway to introduce photo identification cards for the beekeeper members of each association to minimize police harassment during the migration of bee hives in search of nectar. The federation has also started a training course on beekeeping on its own (with encouragement from EDA) to minimize dependence on external agencies in providing this service. Associations are gradually asking for such training services.

Also, together with EDA, the federation enabled some 700 beekeepers to get loans from various public sector commercial banks and rural banks under their micro-enterprise lending facility.

## 11 Cost-benefit calculation

The benefit-cost ratio (~30) presented as part of the Rating Rationale on page 2 of this report is based on deflated values of both the cost (in terms of grant funds used for the value chain initiative) and the benefits (in terms of the incremental incomes earned in 2008, the final year of the project). All values have

been deflated to 2002 prices. A more dynamic calculation based on annual cash flows over the project period and beyond would yield a much higher figure.

## 12 Conclusions

Since the end year of the Ford Foundation funded programme, EDA has continued a support programme for the value chain (albeit at a much reduced level). Thus, training activities for beekeepers continue under the aegis of the federation of beekeepers' associations. It continues as an activity paid for by beekeepers and organised by the EDA team at the local level. The credit linkage also continues to need some support from EDA and the federation because bank staff change regularly and (in particular) managers new to the area, unfamiliar with the workings of the honey sub-sector in the region tend to be sceptical about lending to beekeepers (they are similarly sceptical about lending to any form of microenterprise). As the functioning of the federation improves, both of these activities are expected to be increasingly taken over by the federation and village level associations of beekeepers.

Other initiatives, such as in the marketing of honey (market agents and *Timul* cooperative marketing) continue based on the workings of competitive market forces as do the activities of bee box suppliers, foundation sheet makers and brood suppliers. The growth of litchi honey production and the development of the market for honey (stimulated by the EDA initiative) have created an organic demand for inputs that requires no further support. The promotion of these activities without the distorting influences of promotional grants or subsidies has played a positive role in ensuring their organic development in response to market forces.

Finally, on the issue of attribution (which was the focus of the methodology pilot): was the increase in production and employment stimulated by the high growth of the national economy during the period 2002-08 or was it on account of increased returns to honey production resulting from improved marketing arrangements supported by productivity increases enabled by technical support activities under the VC project? Clearly, all played a role...to what extent, is impossible to say.

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The samples of value chain participants used in this pilot report are much smaller than appropriate to a full value chain rating. A full rating would cover samples of the order of 130 producer enterprises (beekeepers), 20 upstream enterprises (bee box makers, input suppliers, brood suppliers) and another 10-15 respondents in the downstream (processing and marketing) links in the value chain.

## M-CRIL's Rating Symbols

[proposed rating symbols for Value Chains]

| Grade                  | Value Chain rating description   |
|------------------------|--|
| <b>a++</b>             | Excellent, highly cost-effective systems with improvement of facilities and promotion of links within the value chain; resulting in significant and lasting changes for small-holder households, contributing substantially to viable employment and poverty reduction |
| <b>a+</b><br><b>a</b>  | Very good, cost-effective systems with improvement of facilities and promotion of links within the value chain; resulting in significant changes for small-holder households, contributing to viable employment and poverty reduction                                  |
| <b>a-</b><br><b>b+</b> | Good, quite cost-effective systems for improvement of facilities and promotion of links within the value chain; indications of significant changes for small-holder households, contributing to employment and poverty reduction                                       |
| <b>b</b>               | Borderline systems, facilities and contribution to employment and poverty  |
| <b>b-</b>              | Weak systems; limited contribution to employment and poverty reduction   |
| <b>c+</b><br><b>c</b>  | Very weak systems, weak facilities, insignificant contribution to employment and poverty reduction   |