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# Non Timber Forest Produce Based Enterprises and Tribal Livelihoods

## A case study on Keystone Foundation in Nilgiris Biosphere Reserve, South India

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### **Abstract**

*Forests serve as major livelihood resources for tribals and people living in forest fringes as they provide various kinds of Non Timber Forest Produce (NTFPs). However, the increased population pressure, reduced forest species, unsustainable harvesting methods, etc. have been gradually threatening the forest dwellers with reduced productivity. The lack of an organised market for NTFPs and local processing centres are also the main impediments to the realization of better returns to the tribal communities. This case study, attempts to learn from the interventions of Keystone Foundation, which has been working in the Nilgiris Biosphere Reserve area in the southern part of India. Keystone Foundation focuses its interventions on honey and other NTFPs by establishing processing centres, working at product innovation and laying due emphasis on environment conservation.*

### **Introduction**

Amidst the deep forests, Rajamma, a young tribal woman, is beaming effusively. Five years ago, she had been finding it hard to eke out a living even with three acres of agricultural land which had been allotted by the Forest Department many years back. Rajamma and her husband had practised rain-fed agriculture in the land and cultivated ragi, maize, beans, etc. Apart from agriculture, both had been involved in the collection of *amla*, *aralekai* (Myrobalan), *eecham* grass and honey from the forest. They would sell their forest collections to an agent, authorized by the Forest Department. However, due to improper weighing and offering of low price for the produce, Rajamma would receive a meagre amount.

However, now things have changed. Today, Rajamma works in the nearby forest produce processing centre promoted by Keystone Foundation. Rajamma is now much relieved as her bad days seem to have come to an end. The entire processing / production unit is managed by tribal women like Rajamma. Now, there is a prefixed price for forest produce and collectors are no longer cheated by agents / traders. Collection, processing and marketing of forest produce are now in the hands of tribal families.

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Such is the scene one currently witnesses in the forest villages of Nilgiri district, Tamil Nadu, which comes under Nilgiris Biosphere Reserve (NBR). The 5,520 sq. km. NBR lies at the junction of the three southern states of India – Tamil Nadu, Karnataka and Kerala. This Biosphere Reserve is one of the world's biodiversity hotspots with more than 3,700 plant species.<sup>2</sup> It houses a tribal population of about 0.2 million, scattered over numerous tiny tribal habitations across the three states. Some of the important tribal communities are Kurumbas, Irulas, Sholigas, Todas, Paniyas, Kotas, Badagas, etc.

### **Box 1**

#### **Objective for Establishment of Nilgiri Biosphere<sup>3</sup>**

The Nilgiris Biosphere Reserve was established mainly to fulfill the following objectives:

- To conserve in situ genetic diversity of species
- To restore degraded ecosystems to their natural conditions
- To provide baseline data for ecological and environmental research and education
- To function as an alternate model for sustainable development.

The forest ranges from scrub to dry, deciduous jungles in the foothills of Sathyamangalam to tropical, semi-dry /wet, evergreen forests of the Nilgiris. There is a wealth of medicinal plants and herbs, the existence and whereabouts of which used to be well known to the tribes of these hills. However, that knowledge is now fading into oblivion due to disintegration of the community. The Government's notification of the Biosphere Reserve has generated awareness and a clearer perspective for the conservation and maintenance of the ecological balance of the region. NTFPs contribute significantly to the forest sector. An FAO study<sup>4</sup> indicates that the value of trade in NTFP is US \$ 1,100 million. In India, NTFP contribution to forest revenue is 40 per cent. The NBR is perhaps the largest supplier of NTFP in the country.<sup>5</sup>

The tribal communities of the NBR are traditionally hunter-gatherers and dependent on the forests for their existence. They collect NTFPs for trade, honey being one of the major items. Other items collected are resin, gooseberry, soap nut, nutmeg, eecham grass, etc. NTFP collection is a major source of seasonal livelihood for the people. Formerly, they would sell the collected forest produce without any grading for quality or processing at an arbitrary price fixed by traders, which hardly reflected the true worth of the produce. For example, ten years ago, the honey collected by tribal people was sold to traders at INR 18 – 20 per kg as compared to the market price of INR 60 per kg. It was the same with other products. As a result, the tribal population remained in the grip of poverty. Many depended on wage labour in tea estates, where they were paid INR 40 – 60 per day, for

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subsistence. Government intervention in the areas of NTFP collection and marketing came in the form of the establishment of LAMPS (Large-sized Adivasi Multi Purpose Cooperative Societies). However, this intervention did not result in tangible benefits to the tribal community for a variety of reasons.

This was the context of the livelihood of the tribal people in which M/s Keystone Foundation initiated its intervention in 1996, focusing on conservation of the fragile ecosystem and development of the forest dependent tribal community.

## **About the Livelihood Promoting Organisation: Keystone Foundation**

Headquartered in Kotagiri, Tamil Nadu, Keystone Foundation is a development organisation registered as a Trust and operating since 1996. The seeds of the idea for livelihood promotion were sown when the four core member team undertook the survey of apiculture in the state of Tamil Nadu in 1994. The arduous enterprise, with the team having to trek through dusty paths and mountain trails with backpacks, gave them the rare opportunity of seeing at first hand the livelihood situation of the 11 indigenous communities across the 15 hill ranges in Tamil Nadu. It provided the team quality time for learning about the techniques of honey hunting, the forest vines used for honey gathering, the traditions, rituals, social systems and the dependence on such activities for livelihood. It also served as an eye opener regarding the changes in land use, reduction in the forest cover, the hazards of the application of fertilizers and pesticides and the general degradation of the ecology. This understanding provided the team a venue for exploring and addressing the issues of development of the tribal community from a new perspective.

With this, Key stone Foundation started its activities in the NBR area in 1996. The mission of the organisation is *“to enhance the Quality of Life and the Environment with Indigenous Communities using Eco-development Approaches”*. It mobilized the required resources from Ford Foundation and other donors for facilitating intervention in NTFP and other programmes.

## **Objectives and Methodology**

This study attempts to build knowledge in the field of promotion of livelihoods based on forest resources. It tries to understand the different approaches adopted by the livelihood promoting organization, Keystone Foundation, and thus identify the changes the organization has brought about in the lives of the tribal people.

The methodology used for the study is interaction with key officials of Keystone Foundation, staff of processing centres, community and forest officials and review of annual reports. Presently, Keystone Foundation has NTFP processing centres in five localities in Tamil Nadu, of which one processing centre was selected for in-

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depth understanding. Similarly, the village visits were also undertaken among villages pertaining to the selected processing centre. Three villages were visited out of a total of 28 villages where the selected production centre wields its influence. During the field visits, interactions were held mainly with honey gatherers as the study focuses on honey collection and intervention on this product. The focus of the interaction with the community was mainly on the perceived changes in their lives over the last three years. The collected information was analyzed from the perspective of livelihoods, i.e. the changes that occurred in the community as a result of these interventions. Secondly, the approaches of the intervening organization were analyzed to gauge their sustainability and thus cull out lessons for other practitioners.

## **The Intervention**

Keystone Foundation formulated its programmes keeping in view both the fragility of the NBR area as well as the livelihood context, of the people. It laid more focus on conservation aspects on the one hand, and on value addition of NTFPs involving the tribal community, on the other. With regard to conservation efforts, it initiated systematic studies to map the flora and fauna of the region and document NTFP harvesting methods. For development of the forest dependent tribal community it chalked out activities for providing:

- Means of procuring NTFPs regularly and locally
- Value addition to the harvested produce to enhance their income
- Fair weights and measures supported by a transparent system of payment
- Additional employment generation in the locality through value addition
- Improved skills for value addition and micro-enterprise management amongst the community.

The overall objective of the interventions was to enhance the livelihood possibilities of tribal communities through developing village-based micro enterprises for NTFP value addition.

While doing forest resource assessment, the learning from honey gathering and bee keeping gave a deeper insight into the inter-connectivity of the status of the environment and the life cycle of the bees. Bees and their characteristics of swarming were identified as the crucial indicators of the health and status of the environment because the number of eggs laid is proportional to the favorability in the status of the ecology and environment. This inspired Keystone Foundation to work on honey, which emphasized the relationship with the ecosystems and the communities involved.

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It was also noticed that the people had indigenous skill in harvesting honey from rock bees (*Apis dorsata*) from the steep rock cliffs. However, they lacked knowledge of filtering of honey to remove impurities. This was the prime factor which adversely affected the fetching of a good price. Hence, interventions took the form of introducing simple techniques like right time and method for harvesting honey, filtering out impurities, reducing the water content of honey, etc. This optimized the yields, reduced the impurities in the collected honey and enhanced the keeping quality.

### **a. Setting up of NTFP based Micro Enterprises**

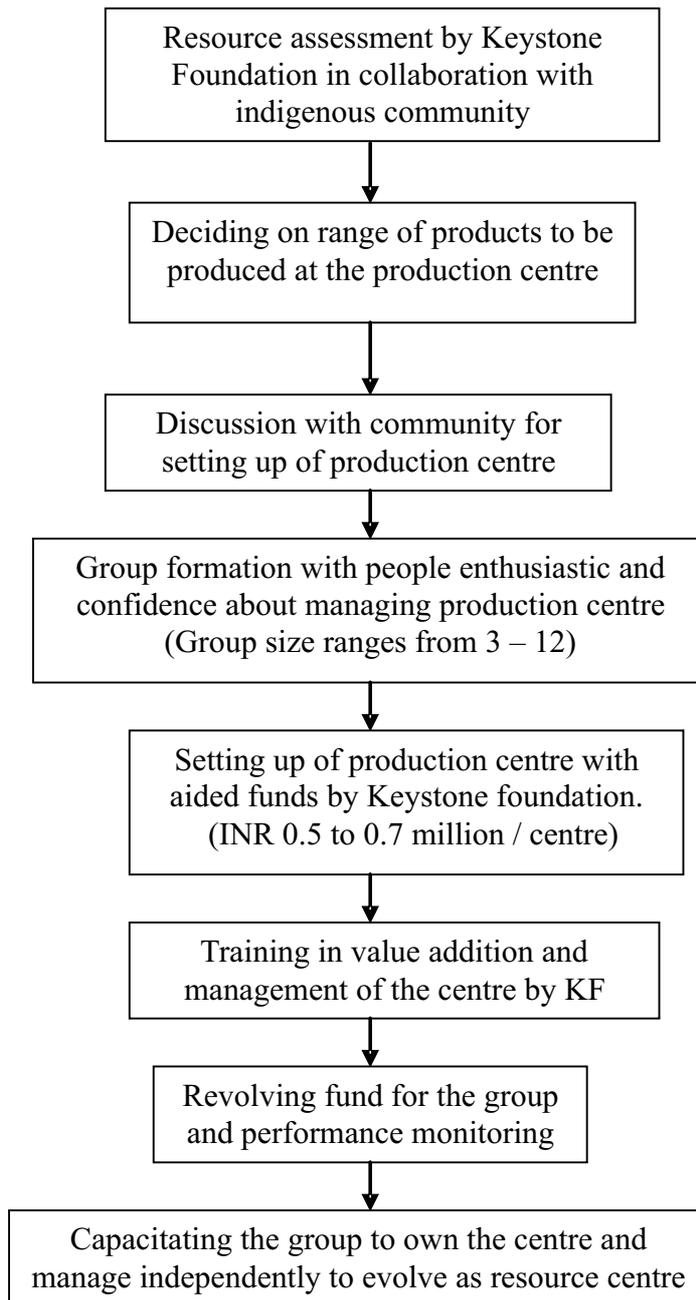
Value-addition, particularly through processing of NTFPs, provides the communities better terms of trade and bargaining power. The effort taken up by Keystone Foundation to add value and generate income at the village level had a small beginning in the tribal village of Semmenarai in 2003 with honey and bee wax. The objective of setting up village level production centres was to provide:

- Increased income and employment at the village level
- Information on end use of the forest produces for better and assured returns
- Infrastructure and knowledge/skills at local level.

The Keystone Foundation established basic infrastructure like buildings, tools and machinery, etc. using grant money from the different donor agencies to the tune of INR 0.5 to 0.7 million at each production centre. It formed informal community groups of interested tribal people and made them governing members of the production centre. Key stone Foundation staff were actively involved in running the centres and in the meantime the Foundation imparted necessary training to the tribal people in managing the centres. The ultimate objective of the Foundation was to develop these production centres as community based institutions, which would be managed by the local tribal community with the objective of empowering target people in the long run. The process of the establishment of a production centre is depicted in the following flow chart:

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**Diagram 1**  
**Process for setting up of Production centre**



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Keystone Foundation considered the following factors while setting up the production centres:

- The location should be at a central place and the tribal habitations should have easy access to it.
- Each production centre has to procure all the available NTFPs from communities, but should process only selected NTFPs which are available in large quantities in the region. As a result of this, each production centre will specialize in processing of a certain NTFP to make the centre viable. Other procured NTFP produce can be transported to another production centre where the processing of that product takes place. This has also helped to increase the skill in the work and product development of that resource.
- Infrastructure facilities will be provided by the Keystone Foundation, which will gradually deal with the supply of NTFPs.
- Each production centre will be managed by a group of 4-6 interested members of the tribal community. The labour needed for the processing activity should be hired locally on seasonal basis.

The concept of this enterprise gradually spread to five other locations across the Nilgiris, covering a larger number of villages. Now, six Production Centres have been set up with the support and active guidance of Keystone Foundation in different parts of the NBR, viz., Sathyamangalam, Banglapadigai, Kurumbadi, Semmanarai, Pillur and Nilambur. Value addition to other NTFPs such as gooseberry, shikakai, soap nut, silk cotton, etc, is also done at the production centres.

Of the six production centres established, one - Sathyamangalam production centre - has matured fairly enough to handle the activity independently. Now, Keystone Foundation is in the process of registering this centre under the Societies' Act. The other five production centres are running with the support of the Foundation. A brief of the activities in different production centres is given in Table 1. It can be seen that these production centres have provided employment to about 75 tribal people. Each production centre processes various types of NTFPs.

**Table 1**  
**Salient Features of Production Centres<sup>6</sup>**

<b>Name of production centre</b>	<b>Amuthasurabhi People's Group</b>	<b>Banglapadigai Women's Progressive Group</b>	<b>Kombei Indigenous Women's Progressive Group</b>	<b>Thumbitakadu Value Addition Centre</b>
Year established	2002-03	2004	2005	2005
Group size	Group Members - 9 Workers - 6	Group Members - 6 Workers - 20	Group Members - 8 Workers - 25	Group Members - 11 Workers - 25
Villages covered	5	10	10	28
NTFP products procured	Beeswax	Amla	Honey, Bees Wax, Amla, <i>Canarium strictum</i> , <i>Shikakai</i> , <i>Puchakai</i>	Honey, Beeswax, <i>Nellikai</i> , <i>Eecham</i> , <i>Kadukkai</i> , <i>Thanikkai</i> , <i>Vedankai</i> , Wild mango
Farm products procured	Pepper, Silk Cotton	Silk Cotton, Coffee	Spices – nutmeg, mace, clove; Fruits –orange, lemon	Ragi, Samai, Mustard, Keerai, Lime, Horsegram, Garlic, Ghee
Products made in the centre	Beeswax candles, Beeswax balms, Green Pepper Preserve	Silk Cotton Items (Mattresses, Pillows, Cushions), <i>Nellikai</i> Products (Salted <i>Nellikai</i> Mouth Freshener), Spice Packets, Paper Bags, Files	Jams, Honey, <i>Amla</i> Candy, Pickle, Lip balm, Soap, Nutmeg pickle, Lime pickle and Orange marmalade	<i>Nellikai vattal</i> , Candy, Jam, Pickles, Honey, <i>Eecham</i> mat, broom, <i>Kadukai</i> mango pickle, <i>Vidankai</i> jam, Ragi powder
Turn over	INR 4.58 lakh	INR 1.76 lakh	INR 2.17 lakh	INR 5.75 lakh

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Keystone Foundation has developed and introduced simple value addition techniques and useful tools and implements in the production centres. The four-layer honey filter developed by the in-house product development expert has been useful in keeping the nutrient quality of the honey unaffected. Unlike the mechanized processing of honey followed in a factory involving heating of honey, here the raw honey is filtered through a four-layer filter to remove the pollen, larvae and other impurities. This process ensures that the natural nutrient, taste and quality of the honey is preserved. Another noteworthy example is the seed separator machine developed for splitting Amla (*Phyllanthus emblica*) for preparing candy and pickles. As regards bee keeping, beehive boxes have been developed and supplied to farmers.

## **Box 2**

### **Realizing better price through Product Innovation**

#### **Case Illustration on Price realisation**

With an aim to optimally utilize all the available beeswax, Keystone Foundation continuously is engaged in designing new products. First it started using beeswax for the preparation of comb foundation sheet, which is used in beehive boxes. Using this comb sheet reduced the duration of formation of bee comb by 2–3 months. Thus it resulted in increasing the productivity of bees reared in boxes. In this way, around 500 comb foundation sheets were sold per year. Subsequently, the Foundation realized that use of beeswax just for this purpose was not enough and more diversified products could be developed. It started preparing beeswax candles. This product became so popular in the market and that most of the beeswax is now used to prepare candles. The Foundation went on to develop pain balms and lip balms, and last year, it also started making soap using beeswax. All these product innovations have created a good demand for available beeswax and now the price of beeswax is more than that of honey. Significantly, 10 years ago beeswax had virtually no market in the Nilgiri Biosphere Region.

Another notable intervention is branding of processed NTFPs. The Foundation has developed branding for all its NTFP, i.e. 'LAST FOREST NATURAL PRODUCE', which conveys the significance of protecting and conserving the last remaining treasure of our natural heritage. It uses this brand to market all its products.

Apart from branding, it has also introduced labeling for honey. The label contains details of plant species present in the area where the bees collect the nectar for producing honey. While processing of honey, care is taken to ensure that honey collected from different plant species is not mixed. This, in turn, ensures certain medicinal characteristics. This unique system has been adopted to reach a niche segment of consumers, viz., medicine preparation in Ayurveda.

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In each production centre emphasis is laid on creating awareness among the tribal people about the sustainable utilization of NTFPs. Trainings are provided to increase people's awareness of the importance of regeneration, proper time of harvest, appropriate and sustainable harvesting practices, etc. to supplement/complement the conservation efforts.

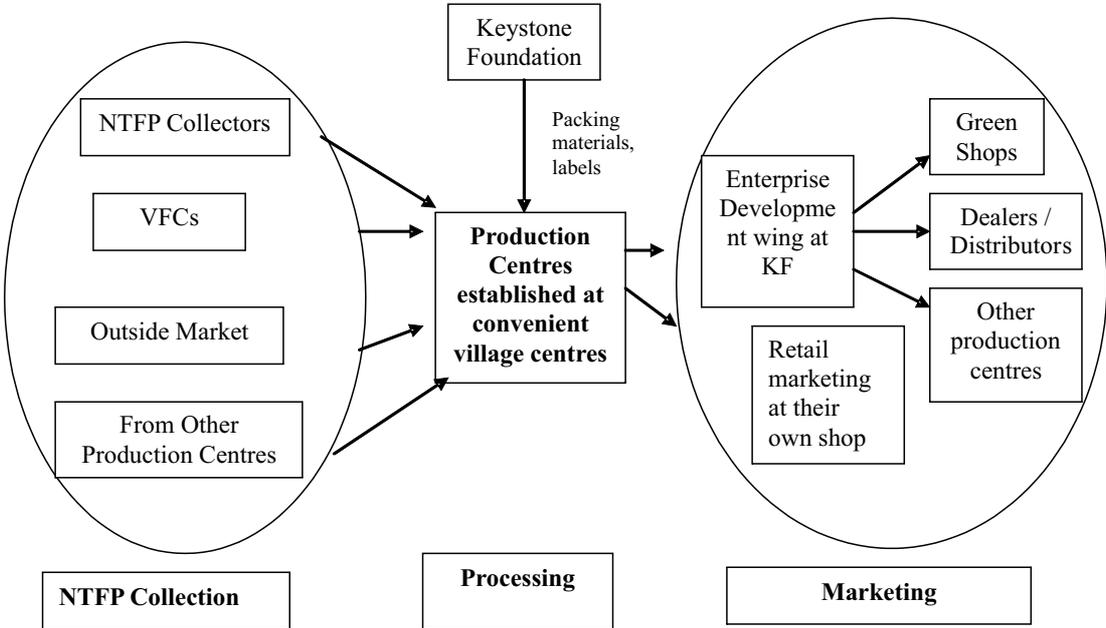
## **b. Procurement and Marketing of NTFPs**

There are four major sources for procurement for a village level production unit. These include the NTFP collectors of the nearby villages, VFCs (Village Forest Councils), other production centres and outside markets. The NTFP collectors gather/ harvest various items of forest produce during the season and then sell it to the production centres. Sometimes, the people from the production centre may themselves visit the villages to procure the raw material. The prices of the NTFP are mainly based on the rates fixed by the Forest Department as well as open market rates at Coimbatore.

Marketing of the produce from the production centres takes place mainly through retail outlets of the production centres and also through Green shops, which have been exclusively established by Keystone Foundation at certain tourist locations like Ooty, Kotagiri and Coonoor, to reach the health conscious niche segment. The Enterprise Development (ED) wing of the Foundation purchases the processed products from production centres at a fixed price. These products are then sold at 20-30 per cent mark-up through the Green shops. Apart from the Keystone products, Green shops also sell products from other NGOs at higher mark-ups than the Keystone products. The production and marketing channel developed for NTFP product has been illustrated below:

**Diagram 2**

**NTFP Procurement and Marketing Channels of Key Foundation**



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### Box 3

#### Thumbidakadu Production Centre at Hassanur, Sathyamangalam

##### Caselet of a Production Centre

The Thumbidakadu production centre is situated in Hassanur village of Sathyamangalam Taluk in Erode district, Tamil Nadu. This production centre was started in the year 2005 in a rented building at Dimbum. Later construction of the buildings at Hassanur was taken up in the land belonging to the community based organization, Thalavadi Adivasi Munnetri Sangham (TAMS). Keystone Foundation collaborated with TAMS and Minor Forest Produce Collectors' Association and constructed the processing plant at a cost of INR 11 lakh.

This centre caters to 28 villages in the vicinity and purchases the produce from the gatherers of these villages. The VFCs of all the 28 villages have been brought under this centre. Hence, the managing committee of Thumbidakadu production centre has 28 members and a representative each from Keystone Foundation and TAMS. Of the total 30 members, 11 members are Governing Council members and efforts are on to register this centre under the Societies' Act.

Presently the production centre has six permanent workers and about 20 seasonal workers. All the workers are women and are paid wages of INR 75 per day. This production centre is mainly involved in processing honey, *amla*, soap nut, *shikakai*, native wild ber, *eecham*, etc. Drying, storage and packing of produce such as *amla* and tamarind are also done. Salted slivers of *amla*, candied *amla* and pickled *amla*, mangoes, garlic, ginger, etc. are taken up as value addition. Soap nut and *shikakai* are powdered and packed for the retail market. Wild ber berries are dried and powdered to use as additive to some products like pickles. Other livelihood activities undertaken by the centre include promoting beekeeping, raising nurseries to reintroduce some useful species in the forests and near the villages, research on bees and biodiversity.

Training is imparted in the weaving of mats and screens using broomstick grass or *eecham* grass, which is collected. A few families have been provided with wooden looms after the training and they now produce mats and screens based on orders. Training is also imparted to the womenfolk in the making of pickles, jams, jellies and marmalades. Training in beekeeping and distribution of hive boxes is also given at the centre. The procurement and sales of major NTFPs at the production centre is shown in the table below.

It can be seen that the procurement of NTFP has increased significantly since the establishment of this centre and has spread over to many other products. In the last two years it has begun to earn profits.

**Profit sharing:** In the year 2007-08, the centre had earned a profit of INR 42,000/-. This profit was distributed among honey gatherers, permanent staff of the centre and 28 VFC presidents. There were 90 honey gatherers involved. One bed sheet worth INR 160 was given to each honey gatherer. A total of INR 8,000 was distributed among six permanent staff of the centre. Each of the 28 VFC presidents was given a gift of a hand bag worth INR 100. It has been observed that this venture has had a positive impact on the tribal people in the area and they are proceeding towards self reliance and are now better adapted to make their own decisions.

**Table 2**  
**Procurement and sale of major NTFPs**  
**in Hassanur Production Centre<sup>7</sup>**

NTFP Name	2005-06		2006-07		2007-08	
	Qty (Qtls)	Amount (INR'000)	Qty (Qtls)	Amount (INR'000)	Qty (Qtls)	Amount (INR'000)
Honey	8	4.80	33.64	203.85	89.41	577.82
Beeswax	0.69	4.83	1.31	11.80	3.12	31.66
Gooseberry	23.60	14.16	134.38	62.00	145.00	87.25
Others	0	0	31.21	26.28	19.1	71.41
<b>Total</b>	<b>32.29</b>	<b>23.79</b>	<b>200.54</b>	<b>303.93</b>	<b>256.63</b>	<b>768.14</b>
Sales through						
Own retail shops	-	11.41	-	201.85	-	283.81
Production Centre	-	-	-	-	-	185.17
Keystone	-	-	-	274.29	-	336.39
<b>Total</b>	<b>-</b>	<b>11.41</b>	<b>-</b>	<b>476.35</b>	<b>-</b>	<b>775.39</b>

## Outcomes and Impact of interventions

While implementing the above-mentioned interventions, Keystone Foundation expected certain outcomes/impacts. These expectations can be grouped into two broad categories, one at the sector level and the other at level of the livelihoods of the targeted people.

At the sector level, the expected impacts were:

- Increased conservation perspectives in the development interventions which are sensitive towards ecological cycles governing natural resources
- Indigenous people being in a position to participate in dialogues with

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- decision-makers on matters affecting their lives in an effective manner for space in advocacy and policy related issues.
- Sustaining traditional and cultural practices.

The expected impacts at the people's level were:

- Increasing the availability of such viable natural resource-based livelihood options for indigenous people and provide sustainable livelihoods and lead to greater self-reliance
- Enhancing the economic status of indigenous people, based on organic and fair trade principles
- Knowledge developed by research and action projects, to be owned by communities and put to practice in their livelihood related activities
- Village groups and institutions to take greater responsibility in managing resources.

Keystone Foundation devoted much of its efforts to assessing the forest resources and understanding the symbiosis between the indigenous people and the forest. It identified several unsustainable harvesting methods, which might become threatening factors, adversely affecting the sustainability of NTFPs in the long run. People were practising unsustainable harvesting methods while harvesting resins and honey. For example, while harvesting resins, people would damage the tree. Similarly, while harvesting honey, they would cut the entire portion of the comb, resulting in delay in regeneration of the comb. Thus, conservation was neglected both by the forest officials and the tribal people. The intensive work of Keystone Foundation towards understanding the different facets of NTFP, its value in the eco system, impact on the lives of people, etc. and its awareness programmes involving the tribal people have resulted in creating a favourable perspective amongst the different stakeholders.

The conservation efforts of the organisation have impacted the harvesting methods adopted by the tribals. For example, the community now follows the right harvesting technique for honey, i.e., removing only the super chamber of the honeycomb and leaving other parts of the comb, which have no honey. This method facilitates faster regeneration of the hive. Similarly, the documentation on NBR conservation in the form of seed collection, herbarium, books, posters, etc. has made the Foundation a knowledge centre. The impact is more perceptible among the NTFP gatherers as they have renounced unsustainable harvesting methods and are now willingly engaged in the conservation efforts.

In order to make a difference in the livelihoods of the tribes which are totally dependent on NTFPs, production centres for NTFPs have been established in different localities. This has directly benefited about 5,000 families of 60 villages. Indirectly, this enterprise concept has been helping all the tribal population in the region by providing the much needed infrastructure and local institutions to process their NTFP collection.

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## Box 4 Case Illustration

### “I would have got only Rs. 1000 ...”

Tadasalatti is a tiny forest village with 35 houses and about 200 people belonging to the Irula tribes. All the 35 households are engaged in NTFP collection, mainly honey, *amla*, and *eecham* grass. Mariyappa, a 65-year-old person from the village, has been involved in honey harvesting from steep rock cliffs since childhood. He and six others used to go to the forest to harvest rock honey every year. All the seven members used to camp in the forest for 3-4 days for harvesting the honey and would sell the honey collected to forest officials or local agents for the price arbitrarily fixed by the latter. Every season the group would earn INR 6,000 to INR 8,000, which the members divided among themselves. Mariyappa used to get two shares as he was a highly skilled cliff honey harvester and group leader too. Today, this group sells the harvested honey to the production centre set up by Keystone Foundation and each member gets INR 70 to INR 100, depending on the quality of the honey. With this their price realisation has risen three times. Last year the group harvested 180 kg of honey and prepared about 80 kg of beeswax. They earned a total of INR 26,000 in the year 2008 and Mariyappa got INR 3,000 as his share. In Mariyappa's words, *“I would have got INR 1,000/- for harvesting the same quantity of honey if Keystone had not existed.”*

The production centres were set up with grant money and the aim was to make them community managed production centres. The Foundation provided much needed marketing support to these production centers and also developed the branding for their products. Of the six production centres it has supported so far, the Thumbidakadu Production Centre at Satyamangalam has reached self sufficiency and is working towards attaining sustainability. It is expected to become an independent centre and now Keystone Foundation provides only technical and other support services. However, the other centres are still being managed and supported by Keystone Foundation.

During the interaction with Thumbidakadu production centre, it was found that there are certain challenges in their way of becoming more successful enterprises. They are:

- Lack of sense of ownership among the group
- Poor knowledge of members regarding accounts and stock keeping, quality supervision and managerial skills
- Irregularity of the work due to seasonal operation
- Procurement of poor quality raw materials.

The introduction of simple techniques like the right time for harvesting honey, and

useful devices like filters, has optimized the yields and reduced the impurities in the collected honey. The simple process of filtering out impurities such as pollen, eggs and larvae make the honey clear and help in retaining its natural properties and the nutritive value without disturbing the delicate balance of the amino-acids and other bio-chemical structures. This simple activity of value addition has made the honey more marketable and brought in better returns. Introduction of such techniques and diversification of products have improved the economy of the tribal population to a great extent.

Earlier, the honey harvested by the tribes had more water content and impurities and hence fetched a very low price. The lack of systematic marketing support also added to lowered price realisation. The harvesters got only INR 18-20 per kg of honey 10 years ago. Now the quality of the honey harvested has improved and fetches INR 80 – 100 per kg of honey. Similarly, the price realisation for amla, soap nut, brooms, etc. has risen threefold. Beeswax had no market and would be wasted. Now at the production centre beeswax is used to make candles, balms, etc. and is procured at the price of INR 110 to INR 150 per kg. The introduction of apiculture in

**Table 3**  
**Impact of the interventions in terms of NTFP prices for collectors<sup>8</sup>**

SI No	Name of the product	1998 price	2008 price
1	Honey	INR 20 / Kg	INR 72 / Kg
2	Beeswax	No market	INR 110 / Kg for semi processed INR 150 / Kg for double filtered
3	Amla	INR 1.5 / Kg	INR 3 / Kg for Collectors INR 6 / Kg for VFCs
4	Eecham Grass	INR 3 / Kg	INR 7 / Kg for Collectors INR 14 for VFCs
5	Soap Nut	INR 1.5 / Kg	INR 3 / Kg for Collectors INR 6 / Kg for VFCs
6	Aralekai	INR 2 / Kg	INR 4 / Kg for Collectors INR 8 / Kg for VFCs

Note: 1) Honey and Beeswax are not licensed NTFPs from the Forest Department  
2) Other NTFPs are procured by VFCs, which arrange transportation to procure the same from villages

Such price appreciation for NTFP is reflected in the overall livelihood status of the tribal people. Even today, despite the development in agriculture, employment generation in tea / coffee estates etc., NTFP contributes about 20 to 30 per cent of the total income of the tribal households. Now, the better prices commanded by

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honey and other NTFPs have made a perceptible impact on the living conditions of the people. Five years ago, saving money in Self Help Groups (SHGs) was a rare phenomenon. Now most of the SHGs formed by government agencies are active and regular savings habit can be observed in these groups. The amount of savings ranges from INR 50 to 150 per month. During interaction with tribal SHG members, they revealed that, it has happened mainly because of better price realisation for honey, bee wax and other NTFPs in the last three years. Further, households are now credit worthy for loans in the group as well as from private financiers for construction of houses, acquiring assets, vehicles etc. Overall, the earning capacity of the people is in the upward direction and is progressing towards betterment.

In addition to streamlining the NTFP collection, processing and selling products such as jams, marmalades, jellies and pickles, the Foundation has also devoted attention to capacity building of the people, especially the women. In each of the six production centres, 15-20 women have been trained on NTFP processing methods. Many work in the same production centre and earn decent wages.

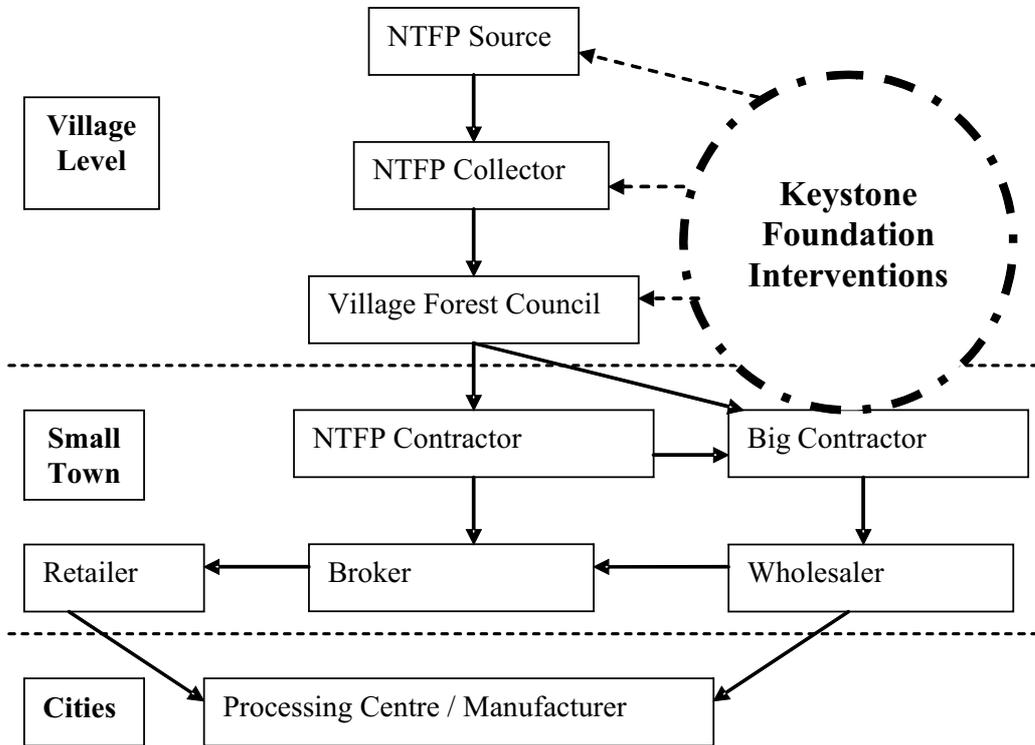
The documentation of wild foods of the tribes, culture and other social systems has generated a lot of interest among different people in the sector. The Foundation has recorded video documentation of the rock bee harvesting practised by the indigenous people, which speak of the true traditions of the tribal families and their skills. This video film has been used as a tool to educate interested people. Keystone Foundation has set up the Bee Museum on the first floor of the Green shop at Ooty, where it imparts knowledge on bees and bee products.

## **Analysis**

The activities of Keystone Foundation have evolved from honey gathering and value addition to encompass all other NTFPs of economic importance. It has followed up with resource assessment, capacity building of the people and building of community based enterprises for teaching self-governance. Overall, it has brought about realization of better price for honey and other NTFP through setting up of village level production centres. These production centres being managed by tribal people have impacted employment generation.

Hitherto, the honey and other NTFP trade in the area had been conducted through VFCs, which in turn depended on NTFP contractors who had a great influence on the fixing of the price of the produce. The absence of any processing centre at the village level had resulted in unfavourable conditions for better price realization by the local community. The efforts of Keystone Foundation have generated favourable conditions for the betterment of the tribal people. Diagrammatically the positioning of Keystone Foundation can be represented as below:

**Diagram 3**  
**Present system of NTFP trade and positioning**  
**of Keystone Foundation interventions**



Its interventions have been mainly at the village level, in contradiction to already existing large processing centres in distant cities. In this way, Keystone Foundation has succeeded in involving the tribal community in all its operations. It has also generated employment opportunities for the tribal people and inculcated in them a sense of ownership vis-à-vis VFCs. Now, the Forest Department is demanding that Keystone Foundation set up more such processing centres in other villages.

The setting up of such production/processing centres at the village level has reduced the transaction cost for NTFP collectors / VFCs, which, in turn, has resulted in realizing better price/ returns realization. Now most of the tribal households earn INR 6,000 to INR 8,000 from NTFP collection annually. It constitutes about 25 to 30 per cent of their total annual income. A few tribals also get employed in such production centres and earn INR 2,000 to INR 3,000 per month.

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The tribal people are acquiring greater skills and are also involved in new NTFP product innovations.

Further, concerted efforts at creating a brand image for NTFP products and strengthening marketing channels have been found to be extremely beneficial for NTFP gatherers in the long run. NTFP products from the region are thus being recognised by outsiders and the immediate fallout of this will be sustained demand conditions and better price for the gatherers.

On the other hand, there are also a few challenges to sustaining the intervention. NTFPs are seasonal in nature and finding continuous work for the production centre is really a big task. After about three years of operation, only one out of the six production centres manages to get continuous work and volume of business. The other five centres run on less capacity and also incur losses. Achieving fully community-owned and managed enterprises appears to be more of an optimistic thought than a realizable reality. The previous experience of failure of LAMPS in the area is a more striking example. Though the approach of Keystone Foundation cannot be compared with that of Government interventions, if the volume of business is not sufficient, there will exist every possibility of enterprises becoming defunct due to losses. Thus, effort should be made to enhance the managerial capacity of the tribal members and to diversify the production activities. Lastly, the quality of the processed NTFP needs to be maintained. Since these products are mostly edible products, which come under food products, it is necessary to obtain required certification.

## Lessons Learnt

The study of NTFP based interventions of Keystone Foundation on the development of the tribal community holds many important lessons for practitioners. They are:

***Focus on conservation aspects:*** Before taking up any forest based intervention, it is always important to thoroughly understand the linkage between the forest and people. This will give rise to better knowledge and scope for sustainable harvesting of NTFPs, keeping in mind the aspect of conservation. Hence, resource assessment of the region along with imbibing the indigenous knowledge and understanding existing practices of the people is essential. Several factors such as unsustainable harvesting, pressure of population, expanding markets for NTFP are threatening the very survival of some species and reducing the quality of many NTFP. Hence, it is necessary to take up conservation measures for making forest based livelihoods more sustainable. It is necessary that any NTFP-based enterprise development should give focus on the conservation aspect as well.

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***Involve local community right from the beginning:*** Tribal people have a great potential of organizing themselves for improving their livelihoods. They require proper guidance, infrastructure facilities and capacity building. Keystone Foundation involved the community right from the beginning and is aiming to build their capacities so that they can own the production centre in the long run. So, establishing community owned and managed institutions is a much needed approach to enhance their livelihoods.

***Promote simple value addition techniques:*** Establishment of value addition / processing centres at the village level, involving the local community, greatly influence the livelihoods of the people. While doing so, the livelihood promoting agency should focus on introducing simple processing techniques. Keystone Foundation introduced a four layer honey filtering technique, which is quite simple in operation and yet adds more value to the produce.

**Product diversification:** Keystone Foundation also introduced diversified products through usage of honey and beeswax to make spiced honey, bee wax balms, bee wax soaps, etc. Such product diversification and processing methods of NTFPs provide better terms of trade and bargaining power to the people.

## **Conclusion**

Augmenting the livelihoods of the tribal people largely requires some focused intervention on NTFPs. This case study has brought out that NTFP based interventions should be designed keeping in view three broad things. Firstly, the community should be involved at all the stages of the intervention. This will increase their stake in the intervention and inculcate in them the sense of ownership. Secondly, attention must be given for sustainable harvesting of the NTFP produce and conservation of the forest environment. This will make the intervention long lasting. Lastly, an enterprise model is required to systematize the process and to run the intervention profitably. Continuous innovation on product development, tools for harvesting and processing and value addition to increase the marketability of the product are important as they together determine the sustainability of such enterprise. The case bring to fore that unlike other products, intervention on NTFP processing and marketing must be designed after having a composite understanding of the communities who are dependent on the resource and also of the forest environment. The success of the intervention would certainly depend on this very understanding.

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## Notes

1. Dhananjaya B N is a Faculty Member with The Livelihood School and Umesh Rao is an Extended Faculty Group Member.
2. Daniels, R J R, The Nilgiri Biosphere Reserve and its Role in Conserving India's Biodiversity, Current Science , Vol 64, 1992.
3. Honey Trails in the Blue Mountains, Keystone Foundation, 2007
4. State of World's Forest. Food and Agriculture Organization, 1997.
5. A Report on Conservation and Sustainable Utilization Including Community Forest Enterprise Development of Non Timber Forest Products in Nilgiri Biosphere Reserve, IIFM, 2002.
6. See 3 above.
7. Annual Report. Keystone Foundation, 2007.
8. Interaction with VFC presidents and NTFP collectors.

## Botanical names used in the report

Common name / English Name	Botanical / Species name
Ragi / Finger Millet	<i>Eleusine coracana</i>
Maize	<i>Zea mays</i>
Beans	<i>Dolichous sp</i>
Rock Honey Bee	<i>Apis dorsata</i>
Eecham grass / Phonex grass / Seemaru	<i>Phoenix loureiri</i>
Amla / Gooseberry	<i>Phyllanthus emblica/Emblica officinalis</i>
Soap nut	<i>Sapindus emarginatus</i>
Kadukkai/Aralekai / Myrobalan	<i>Terminalia chebula</i>
Shikakai	<i>Acacia sinuata</i>

