

BUILDING A NICHE IN THE HILLS

**Annual Report
November 1994 - October 1995**

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FOREWORD

We, as Keystone, have had the opportunity to work in various places in the country and interact with a diverse group of people. This has given us some insights, experience and the drive to do something new. We hope to have innovation as the cornerstone of our work. In each sphere, we attempt to do things in a way which bring about tangible changes both in the ecology and the people living within that system.

One of the things we have learnt, over the years, is to work in ways which directly relate to people, their aspirations and their environment. Bees and honeyhunting has been one of the channels with which we have gained access. It has brought the tribals together in an animated discussion about their forest vines, bees wax, bee migration and honey for use and sale. Honey and bees play a very small but critical part in their lives and for us, this has become a window to touch other facets of their lives.

Work relating to water systems, shelter and skill development, are all which have emerged from discussions centred on bees. Planning & programming of future activities is an on-going process keeping the necessary flexibility for diversions.

We are thankful to the Swallows in Sweden for supporting us financially and technically. More than being donors, they have become partners in this experiment. We are happy to have Mogens Jensen, Apiculture Advisor from the Swallows, with us, who has been with us through our ups and downs.

We are appreciative of Rev.P.K. Mulley of Kotagiri, who has introduced us to this town and the people around. Apart from being a constant source of help, he has been a sounding board on anthropological and tribal related issues of these hills. Ramesh Yesudasen of Clovelly Estate, Kunjappane, has been more like a member of the group. His new ideas and enthusiasm will probably yield results in the future.

We are grateful to the Tamil Nadu Forest Department for the necessary permissions and assistance. Last but not the least, if not for CINTRA, house-cum-office, so much could not have been achieved in so little time. We are grateful to the Farm Tea Estates Syndicate, Kotagiri, for having rented this bungalow to the Keystone team.

Kotagiri,

Keystone

Nilgiris

November

1995

BUILDING A NICHE IN THE HILLS

I. MIGRATION TO THE HILLS

A survey on Honeyhunters & Beekeepers in Tamil Nadu during 1994 helped us to choose a base in the Nilgiris. We arrived in Kotagiri in February 1995. The main reasons for selecting this area were the existing hunter-gatherer communities, their highly skilled honeyhunting practices and the need for action, documentation and support of their traditional activity and lifestyle. Besides, the good vegetation in some areas, would support our initial activity of beekeeping and experiments in Appropriate Technology. This, we hoped, would also open new avenues of work for us.

The lower reaches of the Nilgiris, a part of the Western Ghats, are still home to a number of tribal settlements and retain relatively good forest cover. This region is important, as it is a critical watershed and part of the Nilgiri Biosphere Reserve. The principal rivers, Bhavani and Moyar, depend on streams and rivulets emerging from these hills to supply drinking water and irrigation facilities to large cities and villages downstream. (See Annexure 1 - Profile of Nilgiris)

Honeyhunters' Homerange - cliffs & forests

Though rich, both in flora & fauna, the area is under threat. Unsuitable land use, clear-felling of large forest tracts, urbanisation and a drastic shift from land-based economy to wage-based economy are some of the factors which have contributed to its degradation. Unsustainable development has

eroded the traditional lifestyle, values and systems of organisation at the village level. Commercialisation has ironically changed cultures - gradually, from people living in harmony with nature to more city-dependent and large estate-based lifestyles.

II. TAKING THE FIRST STEPS

We chose a route which involves working from specific issues towards macro issues. Bees and beekeeping was thought to be an effective entry point into the community. So, between January and April 1995, a brief survey was undertaken in the villages/hamlets of Kotagiri Taluk. This enabled us to visit a number of villages, of the two main hunter-gatherer communities, the Irulas and Kurumbas.

TABLE 1

Villages visited	Type of tribals	No. of Families
1. Annaipalam	Irulas	39
2. Baviyoor	Kurumbas	27
3. Bambalakombai	Kurumbas	23
4. Ariyur	Irulas & Kurumbas	20 + 3
5. Kil Koop *	Irulas	11
6. Mel Koop	Irulas	20
7. Kolithurai	Kurumbas	10
8. Semmanarai *	Irulas & Kurumbas	100 + 6
9. Vagapanai *	Irulas & Kurumbas	50 + 3
10. Kandipatti	Irulas	36
11. Gerkeyoor	Irulas & Kurumbas	100 + 1
12. Seddikal	Irulas & Kurumbas	33 + 32?

* Villages selected during the Ist phase of the project

The selection criteria consisted of the following principal parameters:

- # Interest in beekeeping
- # Type of flora available in the vicinity to support this activity
- # Type of landuse and change
- # Based on need, the economic benefits from such an activity
- # Scope & potential for diversifying into other activities
- # Presence of any other NGO working in the same village

The final choice was determined by field observations, several meetings and a general assessment of the villages. The three villages selected, viz. Kil Koop, Semmanarai and Vagapanai, fulfilled the criteria, the most important being the need & interest shown by the tribals. The other villages either had some programmes going on or they were not too keen to take up beekeeping. Some villages which were too far from this region were not taken up, mainly, as we felt that this would dilute our focus.

III. STARTING UP WORK IN THE VILLAGES

The three villages fall under one zone - all at the fringe of good forest patches in the lower Nilgiris (see Map). These tribals are not only important as hunter-gatherer communities, but as the harbingers of the last good tropical dry deciduous forests that form an important watershed to the Bhavani Sagar reservoir in the plains.

The valley where we work

Brief profiles of these villages follow -

A BRIEF LOOK AT THE VILLAGES

Village Name	No. of house holds	Tribal Group	Principal occupations
Kil Koop (KLK)	11	Irulas	# Horticulture # Estate labour # Bamboo basket weaving # Forest Dept. work # Small slow game hunting # Honeyhunting

			# Broom making
Semmanarai (SMN)	100*	Irulas Kurumbas	& # Horticulture & Agriculture # Hunter-gatherers # Contract labour # Tea estate work # Bamboo basket weaving
Vagapanai (VGP)	53	Irulas Kurumbas	& # Agriculture # Hunter-gatherer # Poojari # Estate labour # Timber operations # Goat & chicken rearing

* We are at present working with only 6 Kurumba families.

BEES & BEEKEEPING IN THE VILLAGES...

The beekeeping (BK) project has the following main objectives:

1. To establish a Tribal Village Apiary where Appropriate Technology (AT) experiments will be undertaken on better hive designs, management methods and allied value-addition options.
2. To establish a conventional BK project with appropriate changes in hive design & management.
3. To use BK as an entry point into the village and to develop an understanding of the place, people and diversify into other areas of work.

I. THE FOCUS

The project is based on observations that the conventional beekeeping in Newton type of boxes is not appropriate due to several reasons:

- i) The biology of *Apis cerana* does not conform to the conventional bee box
- ii) The system to handle and maintain is technically complicated, especially for tribals who have been traditional honey hunters
- iii) Economically, the Newton hive is still beyond the reach of rural folk

We want to develop:

Ö An **appropriate system** of beekeeping

í ê ê î
Handling Location Colony Ecology Materials

Ö A cost-effective, locally produced, socially acceptable technology - an improvisation with bamboo and forest vines of the Mulberry Hive, a top bar hive designed in Bangladesh by Mogens Jensen.

Ö Large colonies for beekeeping for better pollination potential, bees wax and honey.

Ö Large colonies to monitor if they are better equipped to resist the virus attack and other pests.

II. WORK IN THE FIRST YEAR ON AT...

The AT project is in its first and most difficult phase. The initial efforts were to find a suitable place and gradually let the idea of keeping bees in different ways, percolate to the tribals. Simultaneously it was important not to become "scientists" doing something inside the village. The emphasis on having an Apiary in the village, was to make the Apiary relevant and in focus with the other needs

and developments taking place. Besides being a place of easy access to the tribals, they could also help in sharing their ideas on the new technology. The disadvantage of this system is, apparently, the slow process of technology development, though the advantage is that it considers many factors, making it relevant to the situation.

To start beekeeping and generate an on-going interest, conventional hives were brought in small numbers. Gradually, the basket hives were introduced.

œ The Mulderry Clone

A sample of the basket hive from Narail, Bangladesh and the presence of Mogens Jensen & later Babul, acted as a catalyst to develop an improvised and local hive in these hills. While explaining the function of the hive, efforts were made with several basket weavers. An Irula tribal basket weaver from Semmanarai has been successful in making the basket hive with bamboo and forest vine. We will call this hive from now - The Mountain Hive. The selection of the wood for the frames and getting them made by a local carpenter, was done at Kotagiri.

The Basket Hive arouses interest

œ Coating Materials for the Mountain Hive

The hive has to be coated with a material that can be multi-functional. It has to be water proof, pest resistant and allow the temperature and humidity to remain at a suitable level for the bees to work. Few trials have been carried out to coat the inside and outside of the hive.

Type of coating material	Mixture %	Remarks
Tamarind seed powder + Black gram + Rice husk	50% + 30% + 20%	Fairly good; but fungal growth observed

Tamarind + Rice husk	70% + 30%	Good - hard & tough
<i>Diospyrus kaki</i> fruit pulp	100%	Good but expensive; fruits available only from one place in July
Castor nut paste + <i>Datura</i> leaf juice	100%	Low adhesive strength; cracking
Tamarind seed powder	100%	Attracting many insects; fungal growth observed

After seeing our efforts, the tribals recommended the trial of:

- * Paste of tamarind seed white, without seed cover
- * Juice of peracetic plant fruits (cipti bandu)
- * Jaggery & lime mixture (yet to be tried)

From among these, the second one works quite well as it is strong, covers the gaps and does not ferment.

œ Acceptance of the Mountain Hive

The Basket hive is a new technology in this area. It has been introduced and therefore, still has to be accepted in the villages. For tribals, beekeeping in boxes is something alien, whether it is the Newton box or any other. Beekeeping as a technology is something that they need to be convinced and be serious about. Their practice is to harvest the honey from the forests during specified periods and eat the brood and honey. For us, it is a slow procedure, as beekeeping has a long gestation period (especially, from the tribals' view of "time"). Slowly, it needs to become a part of their system. Efforts during the last six months along these lines, have seen both success and failure.

Consequently, the reaction of the tribals to this technology has been one of 'wait and watch'. They have been keen to understand the simplicity of this technology and its obvious advantages. However, they will get convinced only when they can see a working and high- yielding Mountain hive.

œ The dreaded virus, TSBV attacks the hives

The Thai Sac Brood Virus (TSBV) which attacks the colony at the larval stage, was first sighted in Kotagiri on 16th February 1995 in a natural colony at High Fields. The colony was in a trunk of a eucalyptus tree. Worker bees were throwing dead larvae outside the nest. On 3rd July 1995, Kil Koop was attacked. A diseased colony was observed next to Kolikarai village. Compared to other areas in Tamil Nadu, the disease spread in the Nilgiris has been slow. However, some diseased colonies located inside forest areas have had a full storage of honey and pollen. According to reports from the Nilgiris Bee Keepers Association (NBKA), the disease has also attacked areas in Coonoor. The first sighting in their area was during March 1995.

Now, TSBV has been noticed in the wild colonies, in all our BK sites. This has led to weak colony strengths in surviving boxes as well as several abscondings.

œ Colony Performance

The performance of the colonies, both in Newton and Mountain Hives, can be seen in the following graph

Summary of Abscending Reasons

	May	June	July	Aug	Sept	Oct
Ants	2	14	7	3	3	-
Starvation						
Handling/ mgmt						
TSBV			1	2	2	3
Absence of queen		1	1	-	1	-
Unknown	3	-	2	1	-	-
TOTAL	5	15	11	6	5	3

œ Colony Monitoring Parameters

Colony monitoring would enable an understanding of changes that are taking place, both inside the bee colony as well as the ecology and micro-habitat around. More data and observations will help in testing the resilience and relevance of a technology in field conditions.

Monitoring has been divided into two sections:

a. Inside Hive Parameters

- i. Temperature inside the colony
- ii. Relative Humidity around the hive? - actually it would be better to take RH inside but we still don't have the equipment.
- iii. Comb area - rate of growth
- iv. Speed of foraging
- v. Observations on queen cells
- vi. Colony source details - rock, tree
- vii. Other colony characteristics

b. Outside Hive Parameters

- i. Ambient Temperature
- ii. Rainfall
- iii. Humidity
- iv. Floral mapping
- v. Predatory attack pattern/type
- vi. Locational factors - water availability, shade, slope

vii. Bee colonies found - overground/underground (mapping of colonisation & wild nest sites)

Besides the above, the onslaught of the TSBV has raised questions and studies that have had to be initiated:

Comparison of disease attack symptoms and spread in the Newton Hive and other hives.

Does a different hive (material, handling, colony size) have an impact on TSBV spread

Indicators of disease spread - symptomatic examples; does the virus speed up in areas with changes in:

- * Climate
- * Vegetation (Natural)
- * Crops introduced
- * Chemical inputs

How long has the TSBV been in the Nilgiris (Refer Networking section) - has it just arrived or is it the tail-end? Possible case histories of other beekeepers.

œ Problems Encountered

Observation of a bee colony

Each hive was colonised more than twice but none of the colonies have stabilised due to different reasons. Some reasons are technical, some out of negligence and some beyond control. A few are -

D Transfer of only bees into hives while eating all the brood and honey combs have led the colonies to desert the box

D Transfer of captured colonies at inappropriate times like noon and afternoons, losing all foragers that leads to starvation of remaining bees

- D Rough handling of colonies, especially the queen
- D No feeding of colony after capture
- D No queen while collecting bees
- D Belief like bees will not stay in new, painted hives or non-teak hives
- D Invasion by ants, knockdown by goats
- D Colonies/hives left inside the forest to stabilise but eaten up by bears
- D No cooperation among tribals to convey location of feral nests - reserve for their own harvest
- D Limited movement inside forest due to wild elephants, poachers and smugglers, which has affected search for bees

A series of discussions between the team members, highlight the following issues that need to be addressed:

- F Change in approach
- F Technical problems - TSBV, rearing bees in the bamboo hive
- F Lack of participation - others priority areas need to be addressed to get a better participation with the beekeeping project

III. OTHER EFFORTS IN THE BEEKEEPING FIELD

œ The Dammer bee

Though the smallest of the honeybees, the dammer bee is important both for pollination and as a special diet. The honey quantity can be upto 750 ml, though according to the tribals, it can even be upto two bottles (1500ml). This honey is used for a number of ailments as well as administered to:

- * New born children
- * Pregnant women
- * Old persons

This honey will not be traded by tribals even if it is available in substantial quantities. Realising its importance and role in the social set-up and the need to understand this bee, we took up rearing experiments with them.

A dammer bee colony was colonised successfully in a bamboo cavity. The queen, brood and honey combs were observed. However, the colony deserted due to an ant attack. Another dammer colony, kept in an earthen pot, was also disturbed by ants.

In the three villages, the following numbers were reared:

Month	Number Colonised	Number Absconded
May	1	0
June	0	1
July	3	3
September	5	0
October	0	4
Total	9	8

Difficulties:

- a. A dammer colony is very different from the hive bee. It is found in clusters, each of which hold honey, brood, pollen, etc. Each of these clusters have to be carefully picked up and placed inside the bamboo tray. Sometimes, they appear to have settled but after a few days, they prefer to go back to the original place (generally, inside a wall).
- b. Dammer bees use a special adhesive collected from resins of trees which they spray around the entrance to their hive. This acts as a deterrent to other predators. Though this paste was collected and applied around the bamboo entrance, it was not effective.
- c. Large scale abscondings during October '95, were mainly in Vagapanai, where a group of monkeys (bonnet macaques) predated on the dammer bamboo hives.

œ *Apis florea* - the little honey bee

A colony was successfully transferred to the apiary. The colony that was growing at a good rate, was destroyed recently by an eagle. Experiments to rear them in a better place for observation and harvesting are being taken.

Apis florea - in the Apiary

œ Miscellaneous

- Ö Feeding solution prepared with Vitamin B12 was provided in SMN and KLK, which has reduced absconding rates.
- Ö A meeting place for all tribals was fixed up with benches at the apiary.
- Ö A list of flowering plants is being maintained around KLK and SMN.
- Ö Keeping some forest grass on bee hive was observed as good shade material for hives.
- Ö Ant wells with stream clay were made around the hives for protection.

IV. HONEYHUNTING: REACTIVATING OLD TRADITIONS

Honeyhunting has been a successful via-media to interact with the tribals. A video recording was made of honeyhunting carried out by the Semmanarai Kurumba tribals. This was done by Nell from Conservation Foundation (refer Networking section) who taught us to use the video camera also. Apart from this `video excitement' during June, more and more honeyhunters have been added in the network. Bees wax for the first time has been given a value - Rs. 50/- per kg. Earlier, it used to be thrown as waste or given for a pittance to traders from the plains.

Documentation of other techniques of honeyhunting done by tribals in this region is being continued. A second season of honey flow in the lower region has passed by, giving them an opportunity to get a good price for their honey. The villages in the lower reaches will be visited in the coming months to document their honeyhunting and trading details.

Traditional rope ladder making with forest vines

"Honeyhunters from Nepal" in the Nilgiris...

Teamwork, enabled a film in Danish, on the Honeyhunters of Nepal to be shown in the village of SMN, with a Tamil commentary. It entailed a risky venture of carrying a generator, a video player and a TV down the rocky road to the village. Improved techniques from that film have inspired the Kurumba group. Discussions on trials are going on for the coming honeyhunting trip. After two serious films related to beekeeping, the crowd was still eager, but to see some proper films - Cinema!!.

DIVERSIFICATION: BEES FORAGE IN NEW FIELDS

The AT project, apart from the technical aspects, has enabled an interaction between the villagers and us. This has been in the form of regular informal gatherings and meetings. This was to know more about them and not necessarily stick to bees and the beekeeping project.

Experience has taught us - "You should have also seen other important issues in the village and not only asked about our bee boxes and why they are empty. We have many other issues and problems" - Raju, A Paliyan tribe in the Palni Hills, January 1992.

Đ "Bees bring Water"

Recently, in the regular weekly meetings at KKK, the entire village talked about their water problem. An interesting exercise of Participatory Rural Appraisal (PRA) took place, where the entire problem of water distribution was diagnosed. With all the families working for five days, a five km pipeline from the source to the village was repaired. They now have water after two years of depending on far-off dug wells and springs. The important part was the active participation of the tribals and their sense of achievement of "we can do it". Apart from the laying the pipes, they all learnt about basic plumbing and the practical aspects associated with this activity.

Hands at work to bring water to the village

Đ Efforts towards change in land use

Tea has come to KKK and SMN through a quasi-Government and NGO programme. For us it is a setback, as we do not agree with the crop choice. Thus, to get an understanding and footing on the land use, we initiated the discussion on diversity and

traditional crops. Important issues regarding felling of trees and exposing slopes to erosion were topics that came up, frequently. Planting of high value varieties of spices, like cinnamon, nutmeg, cloves and pepper was undertaken on a large scale among the families of KLK and SMN.

These were obtained at a subsidised rate from government nurseries at Kallar and Burliar. In the future, small household nurseries will be encouraged among these families.

Millet crops, Ragi, Samai and Tenai were traditionally grown by these tribals, but are not preferred, now. This is mainly due to the influence of the tea lobby and the destruction caused by wild animals. Efforts are on to promote these crops as well as to add it to their diet. Some seeds have been brought from an Irula tribal at Vagapanai and will be given to farmers in KLK and SMN when their land is ready. Later, we will also encourage them to start local gene banks at the community level to usher back traditional crops - useful both for their diet and organic markets.

Ð Training Shed and Kurumba Shelter Programme

The Kurumbas are traditional honeyhunters and harvest Rock Bees (*Apis dorsata*) from high cliffs. It forms part of an important social ritual and provides significant income. This year, we explained the importance of bees wax. In the national & international markets, bees wax fetches a higher value than honey. Simple techniques to process and filter honey has enabled them to get a good price from this season onwards.

Proposed value addition of different products, to be done by women, has brought the community together - a small shed as a training-cum-working place has come up - all through their efforts. During the construction of the training shed, we have documented the process of their traditional way of building.

Women help in Training Shed construction

In our regular meetings with the villagers, the recent discussions have been focused on the problem of housing. These were highlighted during the construction of the Training Shed. The present houses for the Kurumba tribals are in a bad condition. The main problems with the houses are the leaking roofs during heavy rains and the locational disadvantage of being right under a big cliff/rock. The cliff does not retain any water, which drains through the settlement. The houses of these tribals have been built by them and are designed according to their needs with traditional building materials and an age old knowhow.

We went inside the existing houses to see the space utilisation, methods of grain drying by smoke and other shelf spaces. The discussion went on how would they like their new houses to be, where they would be located and why do they want new houses when they have been living in these huts for so long. This participatory exercise ended after three hours quite fruitfully. They also felt more confident that they could express their opinion about their shelter needs to another set of people. This could be communicated not only on the ground but also in the form of a sketch.

NETWORKING & COLLABORATIONS

I. Kassar Trust & Keystone

A good contact has been established with Kassar Trust (KT) in Almora district. They have been working in the Kumaon Himalayas, on a range of issues but mainly relating to water. An assignment to evaluate their work was a learning experience for us as we could observe another organisation working in a mountain system. Many new areas of networking have emerged. Some among them are:

- * Expertise in water harvesting technology
- * Traditional beekeeping by the mountain people in log hives - documentation and possible support
- * New ways of working in the field - group formations and initiatives

II. Conservation Foundation, U.K. & Keystone

A project on the film on honeyhunters is progressing well with the Conservation Foundation, U.K. lending the video equipment for one year.

Mani with the Hi 8

The purpose of making a film is to document a year in the life of these lesser known group, to help conserve a dying traditional activity. The focus of the film is not on the activity itself, but also on environment and development issues facing them today. This film will help in gathering information, resources and promoting the conservation of this activity.

III. TARU, Delhi & Hyderabad & Keystone - Green Exchange

TARU, a professional group working in diverse fields has been a longtime partner of Keystone. Green Exchange and Think Tank Team (T³) are both ideas that have been born out of this interaction. Both formal & informal contacts have yielded results in information, methodologies and financing during dearth periods. Appropriate technology in shelter systems is something that TARU has experience. A housing project in the Nilgiris for tribals is being discussed with them.

Green Exchange, an idea floated through this network will be a platform for NGO products display and sale in India. Apart from the marketing & franchisee support it will also serve as a meeting point for other endeavours.

IV. Babul, Narail Apiary, Bangladesh & Keystone

A key resource person in the Mulderry Hive technology is Babul from Narail village in Bangladesh. He has been with Mogens since the inception and seen failure and success. The decision to bring him to the Nilgiris and interact with Keystone and the villagers, was to share some of his experience and insight with this technology. Babul was here during June-July '95 travelling in the hills and visiting the villages. Apart from the Beekeeping aspect, he has learnt and seen how these tribals live, what are their issues - something which is far removed from his world-view of things. He has successfully imparted training and expertise to persons here. Our field assistant, Subramani, has picked up technical aspects matters and his confidence levels have gone up so much that he wants to visit Babul in Bangladesh!

V. Save Nilgiris Campaign, Ootacamund & Keystone

SNC has been interacting with Keystone since last year during the survey. Rev. P.K. Mulley has been regularly exchanging useful information. Lately, their idea of a Nilgiri Documentation Centre has been discussed. The need for a resource centre housing useful material for local use is essential. We feel that such a centre will greatly help many groups and individuals in this threatened mountain district. Work has been initiated on this front.

VI. NBKA-UPASI-TNAU & Keystone

The Nilgiris Beekeepers Association (NBKA), a new body of beekeepers/farmers in the Nilgiris has been in touch with Keystone. They also work with UPASI (United Planters' Association of South India), an organisation that has a rural development mandate apart from tea, coffee and other spice plantations. This body is responsible for tea plantation distribution among tribal communities. TNAU (Tamil Nadu Agricultural University, Coimbatore) is the technical support organisation.

All three had a good meeting with Keystone in Kotagiri. We have decided together to:

- * Monitor the TSBV spread in the district
- * Find out from the Research stations regarding the progress of *Apis mellifera* (European bee) colonies.
- * Coordinate in other fields of common interest - work in the tribal belt

MEETINGS & PARTICIPATION

Karasanur: Vision 2000 - A meeting of Swallows partners in Tamil Nadu, March 1995

This was the first time that we participated in a meeting with so many NGOs of Tamil Nadu. This

gave us an idea of the work others have undertaken and their philosophy. Though the style of working of Keystone and others are different, nevertheless, it was an interesting meet. In a meeting of this kind, it was important not only to get to know the work of other NGOs, the issues in their area, but to also understand the way a donor works. We had expected a bold vision for year 2000 from grassroot NGOs but it is a different reality to see that problems of finance, continuity and collaboration form the real crux.

Malaysia: International Conference on Bees & the Environment, March 1995

This was a fruitful exposure as Keystone presented its survey findings to the International Bee World, for the first time. It was very well received and a number of exchanges and affiliations have been established. Some of them are:

- * Keystone has been able to focus attention on the issues of Beekeeping & Development in Third World Countries
- * Keystone has been made a member of Standing Commission on Beekeeping & Development in APIMONDIA - a world body of beekeepers all over the world. The Chairman of this Commission is Dr. Nicola Bradbear of Bees for Development, U.K.
- * Contact established with BEENET Asia and the Malaysian Bee Research & Development Team (MBRDT), headed by Dr. Mardan.
- * Contact initiated with Dr. David Bellamy of the Conservation Foundation, U.K. who was quite interested in our work and the possibility of a film on the last honeyhunters took shape.

Seminar on Community Seed Bank organised by Academy of Development Sciences (ADS) at Raigad district, Maharashtra, October 1995

Two things could be achieved during this trip:

1. A visit to the Central Bee Research & Training Institute, Pune, to get some information on *Apis florea*, *Apis dorsata* and the dammer bees. There was a useful meeting with Mr. M.G. Soman, a person who has done some research with *Apis dorsata*. Useful information and the possibility of him visiting us have been created.
2. The workshop on the community seed bank was interesting. This was to gear us with our land development projects and the revival of traditional crops. Methods to propagate, store and for after-care were all discussed. Useful contacts and follow-up programmes have been planned for the near future.

AVENUES FOR INCOME GENERATION

As a policy to be able to be self-reliant in our work in the longterm, we have initiated small steps that would bring in some income and create an awareness for this kind of

work.

I. T-SHIRT PROJECT

T-shirts have been sent to friends & well wishers in Denmark, Sweden, USA, Canada, Germany, France, U.K. & Malaysia. In India, it was well received through TARU's network in Hyderabad and New Delhi. Others who have helped in selling are in Gujarat, Pondicherry, Calcutta, Lucknow, Varanasi & Madras. Some T-shirts have been sold in local areas.

Funds from the sale are gradually coming in. From the significant success and response from T-shirt sales this year, three organisations - Kassar Trust, TARU & Keystone have decided to come out next year with a wider variety of designs & numbers, depicting issues and work in each area.

II. BEES WAX CANDLES

Bees wax which was thrown as waste, is being used to make an earthen lamp. The training shed will be used by the women in SMN, to start producing these items. Sample pieces have been sent through Mogens to Scandinavia to gauge the market response to such an effort. Possible tie-ups with other boutiques selling candle products and other natural items are being explored.

III. LAST FOREST HONEY

Honey from honeyhunters has started pouring in. It is being bottled and sold in local markets and Delhi. The brand name, **Last Forest Honey**, focuses on the last, few forest patches available in this part of the country. If honeyhunters are allowed to continue their traditional activity by offering them a good price, then these areas will remain and looked after by these communities.

VISITORS & THEIR CONTRIBUTION AT KEYSTONE, KOTAGIRI

Many new ideas and mechanisms of working together are generated during visits of friends and well wishers. Many initiatives have taken place after these visit - some have planted a seed for an idea to germinate while others have actually gone back and carried out the idea.

i) **Think Tank Team-T³** is an idea that has taken shape during **Som's (TARU, Delhi)** visit to the Nilgiris. T³, is a Joint Initiative for Action, which proposes to meet once a year to discuss environmental and development issues facing the country today. This is a multi-disciplinary group of academicians, NGOs, scholars, media & marketing personnel, etc.

ii) **Rupa from TARU, Hyderabad** is one of the principal people behind Green Exchange & the Green Shop. She brought with her a number of bamboo items made by the basket weavers of Assam that could possibly be taken up by the Irula & Kurumba basket weavers of the Nilgiris. She is coordinating the marketing and outlets for NGO products.

iii) **Birgitta (Swallows in Sweden)** and **some NGOs** from the Karasanur meet, were a welcome break in the Nilgiris. It was an opportunity for her to meet us all finally and discuss the project and future programmes. For the NGOs working in other parts of Tamil Nadu, it was a new experience of mountain villages and high cliffs. It was an interesting discussion with such a myriad group.

iv) **Mr. T. Krishnamurthy, a retd. senior Forest Department official** and an authority on Minor Forest Produce, has been in touch with us with advice on the Biodiversity & Income generation Programme. He visited Kil Koop and had a good discussion with the tribals. As he visits the Tree Breeding & Forest Genetics Institute at Coimbatore frequently, we hope to take advantage of his long experience in this field.

v) **Gautam from Creations Constructions in Pondicherry** visited us. After being at KLK and listening to the water pipeline project, he suggested that he would like to send persons who could train the tribal in practical and useful things like carpentry, plumbing and ferro-cement construction. Soon **Chandran from Creations** was here, to train the tribals in plumbing. He spent three days explaining different plumbing equipment - how to thread a pipe, use a pipe range, etc. This exercise was useful as now they will be able to repair their own water system.

FUTURE PROGRAMME AREAS

Tribals in this region and in fact, in all areas, are undergoing tremendous change in their lives, their activities, and the habitat they live in. Some changes are within their control while others are externally induced. Keystone's interventions are in the backdrop of this change. The programme areas need to address this phenomena of losing traditional systems of natural resource utilisation, unique ways of ownership and control and a land use that was probably sustainable during a certain period. The emerging new programme areas have been a spin-off from the on-going contact developed with the villages.

Areas that come out as priorities are:

- A. Biodiversity and an Income Generation Programme using minor forest produce collected by these forest dwellers
- B. Marketing as a tool to support the traditional activities, whether it is better prices for honey or value addition of bees wax and bamboo items - through a skill development & rural enterprise programme
- C. Encouraging planting of high value crops within ecologically sustainable land use options
- D. Building an institutional mechanism within programme areas, to allow flexibility in decision making - especially in areas of basic needs. e.g.
 - # the water problem brought up in a Monday meeting by villagers
 - # initiating a shelter project based on their perceptions and needs
- E. Documentation of this kind of traditional, vernacular architecture or any other activities in this region which may aid its revival & use. This could be a handbook in the local dialect or be passed on to other agencies doing similar work.
- F. Address problems of energy at the community level, be it lighting, water harvesting systems or fuel. Alternate energy technologies would be seen from both an economic and an environmental point of view.

Each of the future programme areas looks at possible multiplier effects, both in terms of meeting basic needs and conservation of a valued heritage. Keystone in the coming year, proposes to enlarge its activities and increase the size of the team.

ANNEXURE 1

PROFILE OF NILGIRIS

Nilgiri District lies in the north western part of Tamil Nadu, bordered by Kerala state on the west, Karnataka in the north, and Periyar and Coimbatore districts of Tamil Nadu in the east and south respectively. The major part of the district lies in the Western Ghats, the north-eastern side leading off to the Eastern Ghats region.

The following is a brief profile of the Nilgiris, covering important statistics and descriptions, which will help give an overall idea about the area, its people and their means of livelihood.

AREA	2549 Sq. Kms
FORESTED AREA	1432 Sq. Kms
NET SOWN AREA	603.24 Sq. Kms.
POPULATION	710.21 Thousand
LITERACY RATE	71.70%
AGRI & ALLIED ACTIVITIES	66.37%
WORKERS (as a % of Total Pop.)	40.67%
MAJOR CROPS	Tea, Coffee, Potato

Source: District Statistics Handbook, 1993

Land Use: The main land use of the district is plantation crops of tea and coffee. Some up-land and fertile valleys grow potato and 'English' vegetables. The average landholding in the district is 1.89 Ha. and the crops are mainly rainfed. Though the value of these major crops is very high in monetary terms, the land is under threat due to cultivation on steep slopes leading to high top soil run-off and a very high use of chemical fertilisers and pesticides due to the nature of the crops. The fertiliser consumption per hectare is 137 kgs, higher than the state average of 124 kgs and the country's average of 72 kgs.

Flora and Fauna: The natural forests of these hills are famous for their richness in diversity with several rare, endangered and endemic species. This uniqueness in flora and fauna has enabled it to be the major area forming the Nilgiri Biosphere Reserve, the only such reserve in the country.

Forests: The upper areas of the Nilgiris are a natural region for shola and grassland vegetation. This pristine vegetation is now lost to commercial plantations of eucalyptus and cinchona, with a few remaining patches of shola forests. These forests are sub-tropical moist evergreen, extending upto 6000 feet. They are characterised by a closed canopy, the main trees being *Elaeocarpus* spp., *Hydnocarpus* spp., *Syzigium* spp., *Celtis wightii*, *Michelia champaca*, etc. The shola and grassland vegetation can be seen at the Mukurti National Park in the hills. Moist deciduous forests are found upto an elevation of 4000 feet, with the lower areas tapering into dry deciduous type. These forests have a mixed variety of species, usually rising upto heights of 100 ft. Dominant species are *Syzigium* spp., *Bischoffia javanica*, *Canarium strictum*, *Vateria indica*, and the many creepers and grass varieties. The lower regions (below approx. 2500 feet), have a mixture of dry deciduous species of Teak, Rosewood, Ventek (*Lagerstroemia lanceolata*), *Anogeissus latifolia*, *Terminalia* spp., and tracts of Bamboo (*Dendrocalamus* spp.).

These forests and grasslands form important catchments for streams and rivers, which drain into the Bhavani and Moyar, the two main rivers lying to the south and north of the district, respectively, and

flowing eastwards to join the Mettur Reservoir.

Fauna: The main wild animals found in the area are elephants, bison, tigers, sloth bears, wild dogs, jackals, hyenas, panthers, Nilgiri tahr, Nilgiri langur, bonnet macaque, common grey langur, Malabar giant squirrel, otters, jungle and civet cats, and ungulates like deer. The area is rich in avi-faunal diversity and is an important place for studies of insects and small mammals.

People: There is also a rich cultural diversity in the Nilgiris, with all the communities having their own customs, beliefs and traditions. The most dominant population is that of the **Badagas**, an agricultural community, who are now part of the mainstream economy. The other communities belonging to the hills are the **Todas**, who are pastoralists, living with herds of buffaloes which is also their source of livelihood. Now this practice has reduced, mainly due to the reduction of grasslands and because of the various alternate sources of income, in the now cash-based economy. The **Kotas**, who were settled in and around Kotagiri, after whom the town is named. They were artisans working as blacksmiths, tanners, rope makers, carpenters, potters and gold & silvermiths.

The other communities are hunter-gatherers, living in the lower forested belt of the Nilgiris. These are the **Kurumbas**, who were jungle dwellers, gathering food mainly, roots, honey, resins, barks, gallnuts which they used to barter with traders for foodgrain. Only a few still live in this old tradition, though collection from the forest is still a part of their lives. Most are settled, with small patches of land on which they practice a mixed variety of crops. There are several divisions of the Kurumbas, according to the skill they are adept at, eg. Yannai (elephant) Kurumbas are known for trapping elephants and are excellent mahouts. The **Kattunaickens**, according to research, are also a group of Kurumbas, known for their skills in honey (Jenu) collection. Traditionally, Kurumbas are known for their supernatural powers.

The **Irulas** are another hunter gatherer community, who have come up the hills from their lower reaches, where they practised slash and burn cultivation of millet and also collected forest produce. Now, they work as tea/coffee labourers and also grow mixed crops on their own land. Though maintaining their traditions, these people are fast to adapt to the changes of the modern world. The **Paniyas** are also found in the Nilgiris, in few numbers. The origin of the tribe is supposed to be from Africa, who came to the Malabar coast as slaves for coffee labourers. They are also hunter gatherers, though now mostly settled into estate labour work.

NILGIRI DISTRICT

- 1 - KIL KOOP
- 2 - SEMMANARAI
- 3 - VAGAPANAI