

# 'APPIKO CHALUVALI'



## Tree Hugging Movement

Tropical Forests of Western Ghats,  
Karnataka, India

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## **1.0 INTRODUCTION**

Many people within India and abroad have heard of 'Appiko Chaluvali' the Tree-Hugging Movement in Kannada language, but to date there has been little information available on the internal dynamics of the movement and exactly how comprehensive their achievements of environmental conservation have been. This document is an attempt to outline the past and present roles of the Appiko Movement and its impacts on the survival of Western Ghats forests and local people. The document has been compiled through personal interviews with Appiko members and a desk based review of newspaper files, and studies carried out by Appiko and other organizations.

Firstly, the document gives an outline of the importance of the Western Ghats Tropical Forests to various life supporting systems. It also gives an introduction to the land and people of Uttara Kannada; one of the few districts of Karnataka where over 80 percent of its area still remains under forest cover. Following is an overview of the destructive, revenue based forest management practices carried out in this area since the beginning of the British rule. Section Three explains how 'Chipko Andolan' the Tree-Hugging Movement in Hindi language, came to fruition in the Himalayas of Northern India and its subsequent influence on the launching of Appiko in Uttara Kannada. Details are given of Appiko's first success in non violent action against deforestation in the Kelase Forest of Sirsi District. Section Four conveys the spontaneous spreading of the movement to encompass the remaining forests of virtually the entire Western Ghats. It puts forward the movement's primary three objectives: to preserve, regenerate and ensure sustainable use of forest resources. The articulate methods used to promote these objectives such as the organization of cultural activities, Padayatra's and the involvement of media are also presented here. Section Five highlights the main demands of the movement in changing forest policies, stopping violation of forestry rules, ensuring full participation of local people and the proper management of forest resources available to them. It discusses their role in the promotion of afforestation projects, resolving conflict between opposing parties and its push for sustainable development. Section Six discusses the impacts of the movement, namely saving forests, involving people, the raising of environmental awareness and ultimately the conservation of biodiversity. An overview of ongoing movements within the area is given in Section Seven. In many ways Appiko has been the influential motivation behind the increasing number of environmental movements arising throughout the Western Ghats. The positive force Appiko and other movements are having towards environmental conservation is of benefit to all, not just for this life, but for generations to come.

## **2.0 WESTERN GHATS**

The mountain range of the Western Ghats line the west coast of India, stretching a full length of 1600km from the mouth of the Tapti River in southern Gujarat to the southern most tip of Tamil Nadu. With heights averaging 1200 MSL the crest line sits from 4 to over 100 kms from the bordering Arabian Sea. The entire region is estimated to cover an area of 160,000sq km and support a population of over 45 million. Along with Sri Lanka the Western Ghats are home to an estimated 4780 plants and 1073 vertebrate species, of which 2180 and 355 species are endemic to the area.

The forests covering most of the lower slopes of the Western Ghats are known as 'tropical forests' as they bring rain by intercepting monsoon winds. Several major rivers of south India originate from its thick forests (Krishna, Bhima, Cauvery, Kali, Sharavati and Tungabhadra). Drier regions such as the Eastern Plateau rely on these rivers to replenish their irrigation reservoirs. Thus, the fragile ecosystem of the Western Ghats plays the vital role of supporting and regenerating various life support systems in Southern India. Annual precipitation ranges from 3500 mm on the coast, to 4500-5000 mm on the crest-line and declines to 1000 mm on the eastern plateau. Perennial rains are largely confined to the monsoon months of June to September. Along with the distinct variations in rainfall across the Western Ghats, comes the cross section of forest systems. Eco-zones include coastal, evergreen, semi evergreen, moist and dry deciduous. The heavily populated coastal zone includes mangrove forests and estuarine wetlands. The evergreen forests have a rich diversity of plant species and serve the vital function of watershed conservation. Moist deciduous forests are particularly rich in bird species, whilst both moist and dry deciduous forests house freshwater ponds and lakes which support a variety of aquatic bird species (Gadgil, M. 1993).

At the micro level the function of the forest is to provide natural resources to support the agricultural system and Non Timber Forest Products (NTFP) for forest dwellers. At a regional level the forests perform the role of watersheds and the provision of plant resources for medicinal use. Globally the forests act as a sink for carbon dioxide and help in the reduction of global warming. The Western Ghats and its rich abundance of flora and fauna have been recognized as one of the two remaining ecological hot spots in India. The livelihood of countless species and human beings depend on the survival of its invaluable system of natural biodiversity.

## 2.1 Uttara Kannada

The Ghats run through the state of Karnataka connecting the districts of Uttara Kannada, Belgaum, Shimoga, Dakshina Kannada, Udupi, Chikamagalur, Hassan, Mysore and Coorg.

Uttara Kannada is the northern most district of Karnataka, bordered by the Arabian Sea, Goa, and the districts of Shimoga, Dharwad, Dakshina Kannada and Belgaum. The region is divided by the Sahyadri range of the Western Ghat belt and covers a total area of approximately 10, 291 square kilometers. An estimated 80 percent (8,271 sq km) of its total area is believed to be still under forest cover. The range rises from sea level to an average height of 500 meters, the highest point reaching above 1000 meters. From the crest line the range falls steeply towards the west and more gradually eastward. There are in all 11 Talukas, 5 in the coastal belt and remaining 6 in the hilly area of the Sahyadri Range. In the latter group are: Sirsi, Siddapur, Yellapur, Supa, Haliyal and Mundgod. The district has four well defined ecological zones: the **coastal belt**, where most of the population is concentrated; the **crest-line** of the Western Ghats, covered largely by natural forest; the **highland area**, occupied predominantly by agriculturalists; then the **Eastern plateau**, with its main crop of paddy. The type of forest varies with eco-zone. The coast is predominated by scrub forest, the crest line by thick moist evergreen forests, the highland area by semi evergreen, and the eastern plateau by moist and dry deciduous forest. Plant species also differ within each area. The major species of the evergreen belt are Uppage (*Garcinia gummi-gatta*), Clove (*Cinnamomum* spp), Wild Pepper (*piper nigrum*) and Mushrooms. Whilst the moist deciduous and semi evergreen areas are rich in Vatekayi (*Artocarpus lakoocha*) and Murugulu (*Garcinia indica*), deciduous forests are rich in Seege (*Acacia concina*) and Harda (*Terminilia chebula*) (Hedge P., B., N., 2000). This intimate combination of eco-zones within a single district is the vital link to its rich biodiversity.

The district is essentially rural. It is estimated that 75% of Uttara Kannada lives in villages and the remaining 25% are based in small towns closely related to the surrounding villages (Bhatt L.S., 1987). Whilst there are large socio-economic differences amongst communities, to some degree they share a common dependence on forests for their livelihood. The major inhabitants are: Havyaks, growing mainly areca nut; Gouda Saraswat Brahmins, mainly traders; Namadharis, Kharevokkaligas, Marathas, Halakki Vokkaligas and Patgars, mainly dependent on wage earning and collecting forest produce; Siddis and Havyaks, living in close proximity to forests depend on it for supply of various items; Medars are artisans who depend on bamboo from the forests; Goulis are pastoralists (Hedge P., B., N., 2000). By religion, 79% of people are caste Hindu, 7% Scheduled Castes, 6% Muslim, 3% Christian and less than 1% scheduled

tribes. As labor is often scarce in upper ghat zones there has been a tradition of seasonal migration from coastal zones for garden work.

Amidst the green hills these communities have settled on small patches of cultivable land. Those in close proximity to the forests rely greatly on a wide variety of its products to support their income and self sufficient lifestyle. They collect wood for fuel, fruits and berries for food, fodder for fertilizer and medicinal herbs. Farmers with small plots of land cultivate mixed gardens of black pepper, cardamom, areca nut (supari), coconut, banana and vanilla. Rice being the staple diet of the people is grown on wet lands and in the valleys during monsoon months. Cotton, pineapple and sugarcane are also grown in some pockets.

Areca nut and paddy farmers take green and dry leaves, Karada grass and soil from the forests to apply to their plantations. These forest products along with farm yard manure are essential for a sustainable yield and help to prevent soil erosion which plantations on the upper Ghats can be prone to during the heavy monsoon rains. A large proportion of households and landless laborers keep livestock for the provision of milk and dung for manure and power.

### **2.1.1 Past Forest Management**

In the seventeenth century the forests were communally owned and a major source of income was the collection of species. The area was known as 'Pepper Queen' for its production of pepper was of such high quality. The pepper was exported to Arab and European markets via the ports in Honnavar and Karwar. This tradition of farming was able to flourish largely because of the conducive environment of its natural forests. The harmonious relationship between people and the forests was disturbed when the British rule took away the peoples right over the forests. Ignoring the interest of rural people new forest policies were put in place allowing the exploitation of its resource base to meet the ever increasing demand of growing cities and industries.

The Indian Forest Act, established in 1865 was the first piece of legislation to declare any forest as government property. Virtually all uncultivated land was zoned reserved forest, with a remaining 25% dedicated to minor and betta lands to provide leaf manure to local farmers. These areas were often highly degraded as they were treated as open area resources. Reserve forests were used to supply cheap timber for ship building, railways and exports. Evergreen tree species that were of little value until the 1940's were cleared for the plantation of more valuable species, particularly teak. Over exploitation of forests accelerated greatly during the Second World War, when the British began to encourage plywood manufacturing industries in India. Policies after

independence remained the same, largely geared towards the production of commercial timber and maximizing revenue.

Uttara Kannada with 80 percent of its land under forest cover was regarded as a backward district. In order to remove the backwardness of this predominantly verdant district a development plan was implemented by the State Government in the 1950's. The development was introduced with four P's.

- Paper and pulp based industries
- Plywood industries
- Power projects
- Planned development in Forestry (Plantations and Mining)

Natural old growth forests were cleared to make way for new roads, power lines and the creation of commercial monoculture plantations of teak, eucalyptus and acacia. In 1958 Uttara Kannada's abundance of bamboo was described by foresters as a 'weed' in teak plantations. Therefore despite its multiple rural uses, bamboo was sold to the West Coast Paper Mill established in 1955 in Dandeli for Rs 1.50 per tonne, which was over a hundred times lower than its market value. The paper factory harvested approximately 400,000 tons of bamboo per year for the following 15 years. Eventually after four decades of opening the paper factory, bamboo resources were totally depleted. The scarcity of bamboo, once considered a 'weed' by foresters created great hardship to local basket weavers and agriculturalists who could no longer afford or rely on the resource. Due to the increasing demand for tropical wood in the international market the state permitted the establishment of plywood factories who were also given timber concessions at a nominal rate. In the process of taking soft wood species from evergreen forests, trees which helped in the regeneration of cane were felled. This resulted in a decrease in availability of cane, affecting the livelihood of traditional cane weavers. The forest department realizing their mistake and the potential to use cane as a resource, developed a new scheme of cane based industries. Meaning artisans could no longer collect cane directly from the forest but would have to purchase their raw materials from the department itself. This led to the loss of traditional skill among artisans as well as the loss of the resource itself. Similarly giant mango trees were sold to plywood industries at very low prices. The rivers of the district were harvested for power generation and numerous dams were built submerging large areas of natural forest and displacing villages. A nuclear power plant was constructed on the banks of the Kali River in Kaiga. Mining opened up the natural resources for more exploitation. The Caustic Soda Factory on the coast led to pollution of aquatic resources.

The removal of the natural old growth forest caused irreversible damage to the areas fragile eco-system. The poorest communities, living within the forests suffered the most from the 'Scientific Management' of forest resources. The depletion of resources and soil conditions often meant poor farmers had to

search outside their traditional occupation to earn a living. The forest policies alienation of the people closest to it caused revolt amongst farmers who consequently often also became responsible for destruction of the forests. The first movement against the forest takeover, known as 'Royta Kootas' (Farmers Meet) began in 1831. This continued until 1837 when it was crushed by European soldiers brought down from the plains of Bijapur. After a century, in 1930 the people started another movement 'Jungle Satyagraha' to oppose the oppressive forest policies of the British government. In protest against restrictions made by the government on people's use of the forest, villagers of Uttara Kannada went in groups to cut sandalwood trees. They demanded the provision of grazing lands for cows and the abolishment of grazing taxes. Pushing for free timber for house construction and agricultural implements and the right to take leaves for the green manure of areca nut gardens. The government agreed to their demands and allotted nine acres of forest land known as 'betta land' for each farmers one acre of areca nut garden. This policy is no longer present but the privilege is still enjoyed by farmers of the Uttara Kannada District. When the green leaves from bettalands do not suffice they take dried leaves from reserved forests. After four years the "Jungle Satyagraha" movement was phased out as it coincided with the civil disobedience movement started by Gandhiji in 1934.

The policy of gaining revenue from forest based industries continued for almost one hundred years up to the end of the 1980's. As these policies for the most part failed to meet the needs of the local people they too were often guilty harming the forests. With an increased pressure from a growing rural population, minor forests soon became depleted leaving reserved forests vulnerable for exploitation by local people. The end result was a reduction in forest cover from 81 percent in 1947 to 35 percent in 1998, causing irreversible damage to the areas natural resource base and its people. Increased forest degradation led to depletion of soil nutrients and drying up of streams. Rainfall patterns changed, drastically threatening crops. Monoculture plantations did not produce useful forest products such as leaves for fertilizer or small branches for fuel. Pepper, manure and medicinal herbs, once available in the plenty were slowly disappearing. The rich biodiversity of the Western Ghats was in danger.

As the people of Uttara Kannada began to experience the adverse effects of these un-sustainable policies they took it as their duty to oppose further destruction of their forests. During the early 80's the farmers of Sirsi and Yellapur forced the government to abandon a project to construct a hydel dam across Bedthi River. During this time the local people came into contact with Chipko activists from the Himalayas. This interaction led to the sowing of the seeds of a local movement, known as 'Appiko' to embrace.

### **3.0 THE APPIKO MOVEMENT**

Appiko Chaluvali (hugging movement in Kannada) was born on September 8, 1983, when the people of Sirsi taluka joined hands to stop the axe-men from excessively felling trees in the nearby Kelase forest. The movement was inspired by a visit from Sunderlal Bahuguna, leader of the similar Chipko movement of the Himalayas.

#### **3.1 Chipko Andolan**

Chipko was born 10 years earlier by Sarvodaya (Gandhian) workers in a hill village of Uttar Pradesh. It was in 1930 that the people of this area began resistance movements against the government's policy of exploiting forests for commercial purposes. On the 30<sup>th</sup> of May 1930 in an attempt to regain their right of forest care many people joined in a peaceful protest along the banks of the Himalayan River Yamuna. Soldiers were sent to repress their rebellion, killing 17 and arresting 80 participants.

After independence the concept of 'economic development' was introduced further exploiting India's forest resources to benefit the west. Degradation and change in land use continued against the interests of local people. The conversion of natural mixed forests to monoculture plantations of pine created a shortage of basic survival items such as fodder and fuelwood for the village people. Erosion led to the drying up of streams and loss of water supply.

The depletion of natural resources greatly increased the already hefty workload of women in hill villages. In addition to household duties the women take care of the cattle and till the fields. As the forested land diminished these women had to walk further and further sometimes up to 20kms across steep terrain for their fuel, fodder and water. As the land was becoming less able to sustain the livelihood its people, young men began to move down from the hills to the cities in search of work. The opening up of liquor shops in these areas made the remaining men futile and left households poor. Thus, further disrupting the hill village's family lives and laying additional burden on the women to look after the old and children as well as cultivate the land.

Seeing their struggle, Mahatma Gandhi sent some of his Sarvodaya workers to help the rural people. Ashrams were established in the foothills with the aim of giving women workers practical guidance and encouragement along the Gandhian lines of non-violence. The Sarvodaya workers also settled in remote villages, creating a feeling of empowerment amongst the hill women. They joined together in a non-violent protest against the liquor shops forcing the government to ban the sale of liquor in Uttarakhand. The success of the non-

violent struggle raised their self confidence and stood as a supportive foundation to the Chipko movement.

The Sarvodaya workers helped in setting up labor co-operative organisations to enhance the livelihood of hill families. One such organization was Dashauli Gram Swaraj Mandal (DGSM), established by Sarvodaya workers in 1964 at Gopeshwar in the District of Chamoli. Their woodcraft unit relied on a small supply of ashwood, well known amongst village people for its lightness and strength. The small-scale forest-based industries set up by DGSM were however never in a position to compete with their rich counterparts. Conflict arose between the DGSM workers and the forest department in 1973 when they were refused their usual supply of ash wood trees. The forest department preferentially gave the supply of ash wood trees to sports companies from the plains ash, offering the DGSM workers pine instead. But pine is weak and heavy in comparison and would therefore not have been a suitable alternative for making agricultural implements.

In March of 1973 the villagers learnt that some 50 ashwood trees in the Mandal village had been marked for use of the sports good manufacturer. The villagers and DGSM workers together decided in a protest against the discrimination they would stop the trees from being taken. Using the non violent ideals installed by the Sarvodaya workers they resolved that rather than taking or destroying the trees themselves as they may well have done in the past, this time, they said we'll hug the trees. So the idea came, they demonstrated and the forest contractors seeing the zealous mood of the people abandoned the idea. The trees were saved and thus the Chipko Andolan (Hugging movement in Hindi) came into being. The non violent message of Chipko moved quickly from village to village. Gaining full support from the local people there were many similar and more intensive instances of Chipko people saving forests from being destroyed.

**In Indian History:**

In 1730 as many as 363 Bishnoi people from a village near Jodhpur, Rajasthan offered themselves to the axe in protection of their forests. The Bishnoi sect seeks to live in harmony with nature which means protecting all forms of life including trees and wildlife. To Bishnois the Khejari tree is sacred and worshiped daily. In fact, it is said if one sees more trees than normal amongst the desert, especially the hardy and water resistant Khejari, it must belong to a Bishnoi. They loved their trees like brothers and sisters, highly regarding the fresh air, water and food they provided. Hence when the Maharaja of Jodhpur sent men to their Khejari forests to take timber for his new palace, the Bishnoi people objected. Led by young tree lover Amrita Devi the villagers came to hang onto the trees putting themselves before the axe of wood choppers. The axe men had to hack their way through the bodies of the Chipko (tree hugging) people and returned almost empty handed.

The Maharaja was at first furious but soon had a change of heart when he himself came to witness the massacre. Deeply moved by the nonviolent approach of the Bishnois he apologized and ordered that from that day on there was to be no tree felling or hunting allowed in Bishnoi villages. Hence today the Bishnoi villages amongst the desert are still recognized for their wealth of green trees and animals.

In its first four years the movement succeeded in persuading the government to stop the contractor system and to provide more raw materials for small-scale forest-based industries. The activists also succeeded in improving the wages and conditions of forest laborers. However due to the continued removal of forest cover landslides were an increasing problem, and the drudgery of hill women remained a dilemma. Consequently this led to a change in focus for chipko activist in 1977. Afforestation projects were started on barren land. With the new emphasis on achieving ecological balance came the authentic Chipko song:

“What do our forests bare?  
Soil, water and pure air,  
Soil water and pure air,  
These are the basis of LIFE”.

Activists pressed for the planting of mixed indigenous trees to increase the soils fertility and prevent further erosion caused by monoculture plantations. Chipko activists evolved the philosophy of planting of the 5 F trees for: Fruit, Fuel, Fodder, Fertiliser and Fibre. Trees fulfilling these criteria would help the village economy towards self sustainability.

The movement gained more recognition in 1979 when Sunderlal Bahuguna, the leader of Sarvodaya went on an indefinite fast in demand for a moratorium on

the felling of green trees for commercial purposes. His action and those of other activists continual struggles were eventually rewarded in 1980 when the then Prime Minister, Mrs. Indira Gandhi agreed to the demand for a ban on commercial felling of all green trees. It was also recommended that the ban should last for 15 years in the Uttar Pradesh area of the Himalayas.

To spread the message of Chipko and the importance of saving forests a foot march was organized from Kashmir to Kohima. Covering 4870 kilometers the march was completed in three stages from May 1981 to March 1983. People from all over India joined Bahuguna in spreading the message of saving forests.

### **3.2 From Chipko to Appiko**

Several years later in a lush valley of the Western Ghats the villages surrounding the Sirsi Taluka of Uttara Kannada District were in a similar state of despair over the increasing rate of deforestation in their area. The thick forest bordering the village of Salkani was known by its people as "Ammanavara Kadu" or "Forest of the Goddess", here it is a tradition to worship the Goddess at the beginning of each Spring. In April of 1983 when they went to the forest for the annual ceremony they were shocked to discover the devastation that had taken place. Their sacred place of worship had been striped bare of natural forest by a local plywood factory. The people were growing more and more concerned about the drying up of streams and the shortage of fuel and fodder.

In the neighboring village of Gubbigadde, locals had gotten word of the forestry departments plan to clear fell 40 hectares of natural forest in their area to plant monocultures of teak. They also noticed more and more trees were being marked for felling within the neighboring Bilgal forest. Legally they were allowed to take 2 trees per hectare but in fact they were taking 30 to 50 trees per hectare. The local people were already feeling the effects of deforestation on their fragile ecosystem as a large area of forest had been cleared the previous year.

The village youth club at the time, came together to discuss what to do. They made applications to the Minister, to officials and the forest department, but nothing happened. They were informed that the forest felling was in accordance with 'scientific principles' and they should not interfere.

Local activist, Pandurang Hedge who had traveled to the remote Himalayan forests to join the Chipko Movement, inspired locals with real life stories of how the people of several Himalayan villages, especially women had hugged the trees to prevent them from felling. After completing his M.A. with honors from the Delhi school of Social Work, Pandurang Hedge spent several years involved in

people's environmental struggles in the Himalayan region and Madhya Pradesh. At the time he had recently returned to Sirsi to join organizations in successfully opposing the building of the Bedthi dam. With considerable experience under his belt, Pandurang was able to act as a guide for similar events that were now occurring in his home District of Uttara Kannada (and neighboring areas). By chance, Sunderlal Bahuguna veteran of the Chipko movement and several difficult struggles was visiting Karnataka at the time. Pandurang encouraged the locals to meet with Bahuguna. And that they did, on the 15<sup>th</sup> of August more than 200 villagers came to the meeting set up at a local school. The people were inspired further by Bahuguna's stories of the Chipko people in the Himalayas and what they had achieved through simple acts of non-violence.

This gave the people hope, that they too could stop the felling. Word of the movement spread quickly to nearby villages. In groups they began watching the forest day and night to look out for contractors who were sent to cut the trees. The forest department sensing the growing awareness of people in the Salkani and Gubbigadde areas shifted their location of felling to the remote village of Kelase where some tribal people were living. However the news soon reached the two villages and they warned the tribal people of the adverse effects tree felling would have on their soil, water, food and medicinal resources from the forest. The youth club activists explained to them the non-violent method of preventing felling of trees by embracing them. They agreed to the idea.

On the 8<sup>th</sup> of September 160 men, women and children joined together to oppose the felling in Kelase forest. They set off before dawn so as to reach the forest before the woodcutters started work. Undeterred by perilous conditions of rain, mud and leeches clinging to their feet the people charged on through the forest to the wood cutters camp. Some men already on their way to work were overtaken by the group. Members rushed to embrace the trees before the wood cutters reached them. The workers were bewildered and asked why they were obstructing them from chopping the trees in such a passive manner. One of the activists explained their reasoning. Their leader replied "we have been felling trees for years, we know the consequences; drought, famine will follow and you may have to leave your village for scarcity of water. But you should have started this ten years ago, now there is only a small patch of forest left to save". The workers who belonged to similar communities where their lives depended on the forest were well aware of their actions. One of the workers explained, "We are employed by the forestry department, from now on we assure you we will not fell trees until the officials have settled the matter with you".

Accordingly on the 22 September a village meeting was held in Salkani with the attendance of the district forest officer, some scientists and other prominent public leaders. The officer insisted that the movement should stop, saying that the felling was being carried out in accordance with scientific principles, and that it was required to meet the fuel demands of the nearby town. The people un-

persuaded suggested the officer and his visiting team should first inspect the forest before more discussions took place. Out amongst the forest the scientists were able to undertake a detailed study of the felling activity. Later a report was submitted by the scientists agreeing that the concentration of trees marked for felling was excessive as was the damage made during the course of felling. They commended the people for having brought this to the attention of authorities. They also strongly recommended that local organisations should be involved in the process of forest conservation at all stages.

This acknowledgement by the scientists gave the activists great confidence in their struggle to save the forests. The movement was given the name of 'Appiko' the Kannada language equivalent to the Hindi term Chipko, meaning to hug or embrace. Appiko was quick to spread to other forested areas under threat.

### **Non Violence in Action**

Hursi, a small village in the Karnataka area depend largely on the wellbeing of their agricultural system for their own survival. They had suffered a major setback in 1969 when 900 acres of natural forest was cleared for the plantation of eucalyptus. Since then the people experienced shortages in fuelwood and leaf litter for fertilizer. Medicinal herbs and honey trees had disappeared. Ultimately the loss in natural forest led to a decrease in rainfall and agricultural production.

So when the forest department ordered more trees to be cut in their area the local people called on the help of Appiko to halt more felling. As in Salkani, the people united, marching into the forest they embraced trees stopping the wood cutters from felling. A contractor called upon the forest officer to discuss the issue with the activists. The officer assured them that Sirsi town needed the fuelwood. The people then asked where they should go for their fuelwood and fertilizer. The officer replied that more trees were being planted. But, the people explained their plantations of teak and eucalyptus do not provide fertilizer or fodder, and lead to the drying up of their streams.

The people realized that the officer was not in a position to completely stop felling. Rather than attacking any individual they decided it would be better to request the officer inform his higher officials and the Forest Minister of their issues. Activists gained new found respect from police and officials for their passive approach.

By December of that year Appiko had been launched in eight different forest areas of Uttara Kannada. With newspaper and magazine reports following the action, the movement gained support and attention from the whole state.

### **3.4 The Forest Ministers Visit**

In the last week of December the State Government sent the Minister of Forestry to the area to investigate the situation and make the necessary changes to the forest policies. The Minister, Jeevijaya at the time was joined by about 400 people at Bilgal forest near Gubbigadde. The people walked the Minister to a teak plantation for the meeting. An elder presented him with a bunch of blue eupatorium flowers, a symbolic gesture as the weed flourishes where ever trees are felled.

They showed him the difference between the condition of undergrowth within the plantation and that of the adjacent natural forest. It didn't take a scientist to see which was in better condition. The soil of the plantation was dry and bare, whereas the natural forest floor was covered in leaves and small trees, underneath the soil was moist and nourished. The officers grew self-conscious when they didn't have the answers to their questions of concern over the changing state of the forest. They moved on to visit the Kelase forest where Appiko's methods had been implemented. Similar results showed themselves, the officers could only agree that tree felling was responsible for the destruction of the forests. He assured the people that no further felling of green trees would be allowed in the Bilgal or Kelase forests and that only dead and dying trees could be cut down.

This was a great success for the young Appiko movement, once again proving the effectiveness of a non violent approach to achieving the goal of changing exploitive forest policies.

#### **4.0 HOW THE MOVEMENT SPREADS**

In the beginning, spreading of the movement from one taluka of the Sirsi District to another happened almost spontaneously as the survival of forests directly affected the livelihood of the people involved. The non-violent procedure of embracing trees and thus preventing their felling was demonstrated in ten different places of Sirsi, Siddapur and Yellapur talukas. At this time the people formed a 'Parisara Samrakshana Kendra' or Environmental Conservation Centre in the Sirsi District. The Kendra at that time consisted of two representatives from five to ten different surrounding villages. They would get together to talk about strategies and organize demonstrations in other affected areas. To avoid conflict, it was important to have a support team of people with a foundation in the Appiko practice of non-violent protesting. Members also came up with programs to educate local people on proper management of forest resources and plans to regenerate forests surrounding local villages.

The role of the movement was essentially the building of local groups and their self confidence to stand up for the forests. In reality there are no leaders, decision making itself is decentralized. Communities are encouraged to take action themselves to secure the basic needs of their surroundings. Individuals are encouraged to take responsibility for their actions and make necessary changes to live in equanimity with the land.

The traditional Hindu culture worships forests and mother earth along with other symbols of nature such as the cow, tiger, serpent and moon. The launching of Appiko acted as a vehicle to re-awaken this vital connection of people to nature. The people supported each other in raising their environmental awareness. At the grass roots level knowledge was shared within talukas through informal meetings and word of mouth. One activist M.N. Hedge affectionately labels it as 'the silent movement'.

#### **4.1 Objectives**

Certain members of the movement took it on board to spread the movement further a field to support the entire Western Ghats area. They derived the following three objectives aimed at reuniting the relationship between humanity and nature:

##### **Preservation**

First concern was saving the remaining tropical forests of the Western Ghats. This involved lobbying against unsustainable forest management policies, with the aim of changing revenue based policies to ecological ones. Locals were

encouraged to take action against the forest department's exploitation of resources for commercial purposes.

### **Regeneration**

Second was to plant more native species of trees to restore the ecological balance of depleted areas. Re-forestation following the philosophy of planting of the 5 F trees for Food, Fruit, Fodder, Fuelwood, Fertilizer and Fibre. Local participation is essential to achieving this objective.

### **Sustainability**

This is generally aimed at changing the attitude of local people. Harmful practices such as firing grasses and lopping of trees in the rainy season were deterred. Alternative energy sources such as the use of smokeless stoves, bio gas plants and solar power were encouraged.

## **4.2 Communication**

It didn't take long before the whole state of Karnataka was aware of the Appiko movement and its prime objective to save forests. But in rural villages people were often un-informed of other important factors. Primarily, the planting of more trees on barren land and the proper utilizing of forest resources. To share these objectives volunteers of the movement derived articulate ways to communicate the need for conservation, re-generation and sustainable use of forest resources. Methods used largely followed religious traditions of the people.

In rural areas cultural activities were popular. They used street plays, folk songs, dance and drama performances infused with symbols of trees and nature. A troupe worked solidly for two weeks on a Yakshagana to be staged through-out the state. The traditional folk theatre of Karnataka was adjusted to the theme 'Harmony with nature for eternal prosperity'. The play clearly spelt out what would happen once the forests had disappeared. These traditional rural forms of communication were particularly effective in villages as the people could relate so well to the stories. Songs of Appiko were written by inspired musicians amongst the group, when ever the need arose people would gather to sing the songs, echoing the message of conservation of nature. Prayers and devotional songs added to the activist's inner strength to bring about social change.

**Peoples Support**

In South Kanara people called upon Appiko activists to help combat an outbreak of 'Kysanoor Forest Disease'. Villagers became concerned when the disease otherwise known as 'Monkey Virus' had claimed over 200 lives of forest dwellers. Health experts from the National Institute of Virology in Pune confirmed their suspicion of its link to the increased denudation of the natural forests on which they survive. Street plays and traditional folk dramas were the key in spreading the message to affected rural villages where many are illiterate. In initial stages support towards the movement came from daily contributions of a handful of grain. This selfless act of giving known as 'Sarvodaya Patra' showed the encouragement and commitment of the village people. Over 70 years ago people of this area had followed a similar practice during the 'Jungle Satyagraha' against the British regimes forest policy as part of Gandhiji's Swarajya movement.

Activists undertook various padayatras (foot march) to interior villages to share their ideas and ultimately motivate people to launch the campaign on their own. A padayatra is an adaptation of the tradition of a pilgrimage, a central feature of the religious life of India since ancient times. During the padayatra, participants temporarily leave their homes to discover the present state of the forests and connect with the people whose livelihoods depend on it for their survival. A lot was to be shared and learned by the members involved and the villagers they met along the way.

The first such Appiko Padayatra began on the 10<sup>th</sup> of April 1984 and covered 650 kms. In all they visited 300 remote villages in the talukas of Sirsi, Siddapur, Yellapur and Sorab. Their foot march covered forest areas ranging from plain deciduous forest to the semi evergreen and evergreen areas of the Western Ghats. Being so close to the forest they were able to see for themselves the affects of deforestation on its surroundings and the difficulties it caused for the local people. They noticed the depleted condition of soil in areas of monoculture plantations. In areas of 'selective logging', evergreen forests were gradually degrading to semi evergreen and then to deciduous forest and eventually shrub forest. Farmers told them of the erratic rain falls affecting their crops and the scarcity of fodder for their cattle. They learnt of the kind of harassment being giving out by the forest department, denying the locals access to the forest. They met a man whose honey tree, once home to 1200 beehives had been felled by a Plywood factory. They were surprised to discover that on more than one occasion the people themselves were to blame for the damage to the forests. Large areas of forest had been cleared for human settlement or cultivation of land. Fortunately, the activists on the Padayatra were able to share their knowledge on the importance of forests and the reasons for its depletion. The

primary two reasons being; unsustainable policies employed by forest officials and the mismanagement of its resources by local people. The padayatra group carried with it movie slides and a small projector for use to educate the people. Volunteers and village people would gather in the village school, panchayat office or cooperative society to discuss what they could do to protect and regenerate the forests. The new smokeless stoves introduced to help the people conserve fuel wood were of great interest to local women. Padayatra's were often on a tight schedule to cover as many villages as possible each day. As padayatri's walked from village to village many people joined their onward march. This particular walk, raised the slogan 'Kaadu Ulisi, Belesi: Adu Nimma Jeevadhata' which means 'save and grow forests: it is your life bearer'.

A second Appiko Padayatra was carried out in 1987; this covered 1450 kilometers along the river catchments of the Western Ghats. In between villages people from various districts of Karnataka joined the march. Slide shows and lectures were given by activists in schools and colleges in an attempt to raise awareness and involve the younger generation in forest conservation. That same year a 350km padayatra was undertaken to oppose the Kiaga Nuclear Plant. The plant was located in a remote area so didn't appear to directly effect anyone. The foot march was carried out to raise awareness of the potential devastation to forests and the environment from the proposed development. Previously the proposal had had little resistance as it had tempted people of near by Kawar with the prospect of new jobs. The padayatra proved to be a great encouragement of people to stand up against the development.

Small stalls were set up at local melas to distribute information on the movement. Meanwhile, press and media at state and national levels played an important role in spreading the ideas of Appiko to a wider audience. In Karnataka, talented writers, poets and cartoonists also contributed in conveying the message of harmony with nature.

## **5.0 DEMANDS OF THE MOVEMENT**

### **5.1 Changing Forest Policies**

Since the beginning of Appiko in 1983, their primary aim has been to preserve the remaining natural forests. Revenue based forest policies employed by the government where the biggest threat to the survival of the forests, hence there became a great urgency for forest dwellers and local people to take action against these exploitive policies before the forests were irreversibly destroyed. Appiko activists have played a key role in helping various local groups lobby against policy makers and bring change to age old unsustainable forest policies.

Forest policies since the end of the 19<sup>th</sup> century promoted the clearing of natural forests to make way for commercial monoculture plantations of valuable species such as teak, eucalyptus and acacia. Between 1950 and 1980, teak plantations rose 119 percent from 24,388 hectares to 53,354 hectares. This method of forestry was introduced by British expertise based on a model of 'scientific forestry' borrowed from temperate forest regions of Europe (The Pioneer, 1995). Adopting the forestry science of a temperate region to a tropical region such as the Western Ghats had detrimental effects on its forest diversity and people. As the complexity of plant species available in a tropical forest ecosystem is heavily relied on by traditional farming and livelihood systems, a forest of commercial monoculture species is highly undesirable.

Monoculture plantations are a problem as they do not produce useable fodder and lead to erosion of the soil. When farmers tried using acacia leaves for fertilizer they were struck with new diseases on their plantations, it was also found that worms from teak were affecting cattle. The availability of grazing for livestock suffered a decline as commercial species are planted at such high density they do not produce grass. Plantations also caused the invasion of the non-palatable weed, eupatorium which further inhibiting grass growth. Fast growing also means a greater absorption of water. Hence whilst the natural forests help to keep the air cool, monoculture plantations lead to less rain and increased temperatures. Ganapati Hedge, of Hulekal Village says that "Monoculture forests diminish the relationship between the farmer and the forest" as he will no longer go into the forest to collect fodder, green leaf manure, fuel wood or other NTFP that are present in natural forests. Appiko was the result of years of frustration and pent up feelings amongst the local people towards these destructive forest policies.

The first success of Appiko was the ban on clear felling of natural old growth forest within the Kalase and Bilgal forests in the Sirsi Division. This result came in December of 1983 only six months into the peoples stand on forests. As news of

the movement spread to other affected areas, it became important for members to also encourage the involvement of local groups within these areas. In the past local people felt hopeless against the forest department, believing they had no say over management of the forests. The positive results others had achieved through the non violent approach of embracing trees helped to raise their self confidence. Villagers would organize meetings amongst themselves and invite Appiko activists along to discuss what actions to take against the logging. Supporters helped to keep watch over the forests, when news of felling of trees arose, activists would travel to the threatened area, gather other locals and proceed to the forest to confront foresters on the matter. The activist's role of organizing people to launch Appiko in new villagers was not always easy. Houses are often scattered and long distances from the particular forest area. They would contact local colleges to get youth involved. A memorandum outlining the reasons clear felling should be stopped in the natural forest areas would be sent to forest officials declaring if they continued to fell trees in any particular area, Appiko would be launched. The Environmental Conservation Centre known as 'Parisara Samrakshana Kendra' or PKS was set up in Sirsi to represent the movement of protecting the tropical forests of the Western Ghats. This was a tremendous help as it meant village people could always contact someone for support or guidance on forest related problems.

By 1984 the policy of clear felling for conversion to commercial monoculture plantations in Karnataka had been abolished and replaced with the method of 'selective forestry'. The new scientific method allowed for the felling of two green trees per hectare. This seemed reasonable, but locals soon discovered that in practice they were not doing this. In order to assess the damage caused by felling of trees Appiko activists carried out nature camps, where they would actively involve young people to carry out field surveys of felled areas. Surveys found that foresters were violating the policy and felling more trees than legally allowed. Such exercises proved to be a great way of bringing local people closer to nature and informing them of policy rules.

**Selective Forestry in Practice**

An example of selective forestry in practice is shown by a case from the thick evergreen forests of Watechalla, near Honnavar. The protection of forests of this area is of great importance as they are located on steep slopes of the Sharavati River Catchment. The British recommended that because of the steep slopes logging operations should not be carried out in these areas. Thus, its virgin forests remained untouched until 1979 when Plywood companies were given permission to begin felling of green trees on steep slopes. The felling of trees in high hilly areas along with the dragging of logs and the construction of roads leads to the loosening of soil which is then washed off during heavy monsoon rains. Due to silting of the Sharavati River, villagers near coastal plains have suffered severely from floods since logging began in 1979. A contract to fell 700 more trees was given to a Labor Co-operative Society in October of 1984. News of the felling reached activists in Sirsi in December of 1984. Activists joined a strong group of 70-80 people including local youth and neighboring villagers to visit the site and inspect the damage. In the process of felling one tree, ten to fifteen had been damaged and the rolling of huge logs down the slopes had caused more damage to trees and soil. The disregard of the forestry rules was evident as trees were found to be felled adjacent to streams. The village consisted of forty Harijan families whose livelihood directly depends on the forest for their supply of cane. Being present in the area of felling they were shocked to discover that this was how cane and green trees were being destroyed. The advantage of being on site with foresters is the ability for activist's to point out reasons for the importance of forests. Here they were able to explain the sensitivity of the area and the fact that logging operations had been carried out there since 1979. A forest departments rule states that an area should only be felled every 60 years. Their experience showed how in practice the rule of felling two trees per acre was impractical.

As more cases of violation of the selective logging policy arose, Appiko activist's lobbied for a moratorium on the felling of all green trees.

During the late eighties the government gave permission for selection felling to supply plywood logs and railway sleepers, this further opening gaps in the forest canopy. In 1987 the movement opposed forest concessions given to plywood factories and forest based industries.

**Saving the Kavery from running dry**

In contradiction to the government forest policy issued in June, 1986 restricting any new allocation of forest area to existing plywood industries, the movement was shocked to find the government had passed another order just a month later allowing the Western India Plywood Factory to extract wood from the forests of Kodagu for another five years. This further outlined the government's priority for earning revenue rather than conserving resources. The tropical forests of the Kodagu District are of great importance as they form part of the Kavery watershed which plays a vital role in supplying water to a large area of south India. Since the British rule (1830's) the natural forests of the area have been cleared for conversion to cash plantations, predominantly coffee and tea. Old trees were felled and replanted with fast growing acacia and silver oak species to give shade to the tea plants (Hedge, P, 1987). Later large scale logging was carried out by plywood factories; this led to an influx of encroachers who further devoured the forest. Consequently the ethnic composition of Kodagu changed immensely during the nineteen seventies and eighties. According to bee keepers of the Kodagu District, the disappearance of many flowering trees and the reduction in honey production during these times was a reflection of the forests change in micro climate. People organized themselves to launch Appiko in the Udumbe forest of Kodagu in 1986. The movement spread fast and soon they had people watching over 12 different forest areas of the Kavery to protect the trees from woodcutters. They ordered leasing of the forests to be stopped immediately and the re-planting of native species such as 'edinji', which gives fruit and honey to be undertaken on degraded land. With the importance of the Kavery highlighted the government ordered the felling to stop. Going off their success the people went on to launch a strong movement against the destruction of Shola Forests for the establishment of a new tea estate.

Finally, in 1990 Appiko's active struggle was rewarded as the State Government imposed a total ban on the felling of green trees within natural forests. The order stated: "The ban on felling will continue in the evergreen forests of Western Ghats with the objective of maintaining the ecology and environment. Only dead trees will be permitted to be removed. Care should be taken to see that no damage is caused to other standing trees while removing dead trees from the forest". The order confirms that this ban does not apply to artificially raised plantation species such as Eucalyptus, Teak, Acacia and Casuarina.

However, before long the department's unscientific methods of extraction of dead and fallen trees also became a cause for concern. The regulation of not damaging other trees whilst removing dead trees was not being adhered to, and even activists agreed that it was almost impossible to remove one dead tree from an evergreen forest without damaging other trees. Further more, green trees and young saplings were being cleared to make way for new roads,

established against the Forest Act to transport the dead trees. Hence despite the seemingly ideal new policy the reduction in green cover continued, only at a reduced rate.

PSK along with the Sirsi Based NGO, Prakruti (see section 8.0) conducted a systematic study of the removal of dead and fallen trees in natural forests of the Western Ghats. Several logging sites were visited and impact assessments made. Results revealed that the cutting of one dead tree from three different sites had spared an average of 44 green trees and 2500 small plants per site. Observations also showed:

- Green trees were being felled to build new roads within the forests.
- Regeneration patterns were disturbed.
- The availability of medicinal herbs and NTFPs like uppage (garcinia gummigatta), Mrurgal (garcinia indica) and Rampatra had decreased.
- Opening of vegetation cover led to increased soil erosion and silting of streams.
- Wild habitats were being lost, and an increasing number of species were destroying agricultural crops to survive.
- Honey bees that build their hives in dead trees were less common.
- Village people who use dead trees as fuel wood are being forced to take green trees from the forest as their supply is taken away by the Forest Department.

Meetings and discussions with local villagers were held to create awareness and involve them in conservation efforts. This was not always an easy task as many villagers were of the opinion that the method of logging was up to the forest department and interfering with their work would only cause problems for themselves from forest department workers. Joint surveys with the presence of Forest Department officials, media and local people were carried out where the damage was severe. During meetings the impacts of logging on NTFP and ecology could be explained to the participants. To minimize the damage to forest ecology members strongly recommended the forest department change the technique of harvesting trees and establishing roads inside thick forests. To reduce soil erosion they also urged officials to completely stop the extraction of dead and fallen trees within the crest line of tropical forests. Elsewhere logging should be carried out once in every 10 years and completed within one year. It was highly recommended that degraded forestland and roads be replanted with NTFP and medicinal plants and all forest roads be closed after use by the digging of trenches and fencing of entrances. These best management practices are being encouraged throughout logging sites in the Western Ghats. In some cases forest officials have made attempts to fulfill villager's demands, still there is a dire need for people to monitor logging activities and check for unsustainable logging practices. Now it has been 15 years since the last moratorium and Appiko members are seeking a review of the whole policy.

In the past Forest Officials have made attempts to lift the ban on green felling, reasoning that the Department needed to earn revenue and that trees over 100-150 years old should be removed. In December of 1999, the Karnataka Government passed a blanket order for commercial extraction of timber from Wildlife Sanctuaries and National Parks. Protests from local activists broke out, however the order was turned down as it violated the Wildlife Protection Act.

## **5.2 Violations**

As discussed above due to the confident persistence of Appiko activists forest policies have changed in a positive way, but unfortunately the implementation of these policies is often inaccurate. After years of struggle many farmers and local people still feel hopeless towards the forest department's policies and corruption. Greed is there and illegal felling and smugglers are a problem. One farmer of Hulekal village says, "There is a limit to how much we can watch over the forests day and night for smugglers". The construction of new logging roads leaves remote forested areas vulnerable to smugglers and encroachments. Smugglers who come for the most valuable timber species such as rosewood, teak or sandalwood are often reported to the forest department by locals but action is not always taken against them. Each teak tree will sell for Rs 5,000,000 and rosewood will collect even more.

During the mid 1980's cane based industries were illegally over extracting large quantities of cane from forests. In some areas local people were reported to have been co-opted into helping with cane extraction by being paid a daily wage of Rs 40 to 50. This meant there was hardly any opposition from the local people and the cane smugglers were able to get away with more natural resource than was originally allotted. Many local people reported being fearful of the forest officials, believing it was best to stay out of the situation than to risk being harassed by officials. This shows the link between smugglers and the Forest Department. A ploy known as 'legalised smuggling' has been to disguise newly felled trees as 'old' trees by applying black manganese soil.

A recent case was the smuggling of naturally grown teak trees from the Hakkal forest near Dehalli village in Yellapur, Uttara Kannada District. After visiting the site, Prakruti/PSK members carried out a survey of the area revealing 312 teak trees had been removed from the forest over a period of six months. The forest department reasoned its inability to control illegal green felling was due to understaffing. Locals were instead led to believe that forest personnel are also in on the act. To stop further illegal removal of timber, villagers requested that all existing roads into the forest be closed by digging trenches and fencing their entrances.

Locals are still encouraged to keep an eye on green felling and report cases of illegal chopping of trees. If cases are reported to PSK, members will visit the area to inspect the damage and advise on what action to take. The most affective way to bring awareness to these issues is through the use of media coverage. Higher forest officials would also be informed and urged to take serious action against the guilty to ensure it doesn't happen in the future. If necessary, meetings are arranged between Forest Officials and village people to resolve such issues.

### **5.3 Peoples Participation**

In the early 1990's following the Rio Earth Summit, the British government administered financial assistance for afforestation projects in the Western Ghats. Following extensive protests against the management of forests and its exclusion of local people, in 1991 the Karnataka Forest Department (KFD) initiated the Western Ghats Forestry Project (WGFP) funded by Britain's Overseas Development Administration (ODA, now Department of International Development, DfID). In order to involve local people in management of forests the project endeavored to follow the principles of Joint Forest Planning and Management (JFPM), with the objective of maintaining ecology through people's participation. JFMP operates under a Government Order issued in 1993 which prescribes the formation of Village Forest Communities (VFC's) in forest dependent villages. The aim of administrating JFMP in Karnataka was to develop partnerships between VFC's and the KFD for the sustainable management of forest resources on the basis of sharing benefits (sale of timber from plantations for example) and responsibilities. With 80 percent of Uttara Kannada's geographical area under forest cover more than 300 VFC's were established in the district. However the role of VFC's was never clearly conveyed and many appeared to exist on paper only. A major characteristic of the WGFP was the inclusion in all sections of the village to ensure that poor people, women, tribal and other disadvantaged groups who were dependant on forests would benefit. Independent observers were watching to see how the project developed; it soon became apparent that in practice rules of the scheme outlined by the ODA were being changed to suit forest department's motives.

PSK set up a contact program so VFC's could seek advice if required and in 1995 PSK carried out a case study of the Western Ghat Forestry Project as implemented in Uttara Kannada, Karnataka. A survey of plantations showed that most of the VFC's were planted with 60 to 80 percent of monoculture species of teak or acacia. This was totally against the objective of multi purpose plantations to conserve biodiversity and meet local needs. Furthermore of the total 42,000 hectares of forested land taken up by the project, only 1% was accessible to VFC's. The remaining supposedly uninhabited land was to be under the control of

the Forest Department. There had been an attempt to plant native species, however their distribution was below 5 percent of the total plantings. VFC's reported feeling left out of decision making over what sort of species should be planted. Contrary to the ODA rules a majority of VFC's were dominated by the most powerful social groups and men, and in some cases were even led by a person formerly associated with the forest department. Women and poorer sections of society were predominantly left out of VFC's or simply not well informed and the establishment of male dominated VFC's to control common lands often created divisions between villagers. Meetings were often held at short notice in the convenience of the KFD, meaning the cross-section of VFC members were barely being represented. The project was beginning to cause hardship to villagers, in particular women whose voices went unheard or frequently ignored. The scarcity of fuel wood meant that they now needed to travel longer distances to collect leaves and twigs for cooking. With the ODA funded plantations taking over common village land, people were forced to go against the rules of the VFC and collect their fuel wood from forested lands, thus resulting in further deforestation. In some villages, landless families who had encroached on common land for lack of land to grow food were evicted to make way for plantations (Cooke & Kothari 2001). Initially they had high hopes of the JFPM as they were given the promise of cash from plantations but as this never manifested villagers lost interest, often destroying exotic saplings in retaliation.

In aim of restoring the natural mix of the forest the WGFP included the replanting of gaps in the forest with 'valuable timber species'. In order to check the project claims PSK conducted surveys of two regions where gap plantations had been carried out. Studies showed that more than 90 percent of species planted were exotics, namely acacia. So rather than making existing forest dependent communities more sustainable the project further deprived the rural poor and promoted the conversion of more natural forest of the Western Ghats to commercial monoculture plantations. In 1995 a campaign was launched against the project with pressure being imposed on the ODA and KFD to revise their original objectives. Because of the importance of the Western Ghats forests the project gained a high profile in Karnataka and attracted a substantial amount of media attention. In 1997 an independent review of the project was carried out by the ODA and KFD. The review confirmed peoples concerns and recommended a number of changes to the project.

The Western Ghats Forestry Project was phased out in 1998. VFC's were unable to gain sustainability after the project period, largely due to its failure in providing equal participation from all sections of society. To make amends the Central Government of Environment and Forests launched a new scheme under the National Afforestation and Eco Development Program for eco-development and conservation of forests. The main objectives of the new Forest Development Agency (FDA) scheme were (Prakruti, 2004):

- Regeneration and eco development of degraded forests
- Make communities responsible for monitoring removals from the forest
- Employment generation for the most needy sections of society
- Create sustainable community assets for weaker sections of rural populations
- Involve VFC's and make exercises fully participatory

Prakruti, a Sirsi based NGO (See section 8.0) undertook studies to assess and monitor the functioning of the FDA scheme in Uttara Kannada District. A preliminary survey revealed that many VFC's had no idea of the FDA or their rules and regulations. PSK along with other NGO's agreed to support VFC's to ensure they received maximum benefit from this scheme. They distributed copies of the FDA guidelines translated from English to the local Kannada language and held one day workshops to ensure local people were aware of their roles in the FDA scheme. Meetings helped to strengthen VFC's as local people were able to share their experiences and strategies to deal with forest bureaucracy. The participation of some VFC's, particularly those belonging to weaker sections of society suffered a loss as farmers were illiterate or simply couldn't afford to travel to towns to attend meetings. Others were too busy with farm work to attend meetings particularly during monsoon when afforestation and eco development projects were taking place. If VFC's were left un-informed forest department officials were able to use project money at their own wish. Outside assistance was helpful in strengthening these underprivileged groups.

#### **5.4 Proper Management**

The Appiko movement had three dimensions as outlined in Section 4.1. Firstly was to save the remaining forests and restore ecological balance. Secondly it aimed at greening the denuded landscape near villages and last but not least Appiko has tried to emphasize the people's duty in proper utilization of forest resources. Before asking the government to ban the commercial felling of green trees, the people in the villages also had to be persuaded not to cut green trees for their own use.

A series of eco development camps were conducted by local people with the aim of raising awareness of the importance of forests not only for their own livelihood but for survival as a whole. With an understanding of the bigger picture of biodiversity and globalization farmers were more likely to heed against taking from surrounding forests and persuade others to follow suit. People became their own watch guards, those who broke the rules would be reminded of the consequences.

After the ban on green felling local people began to suffer as more and more dead trees were being extracted to meet the urban fuel wood supply. As the

availability of fuel wood became scarce local villagers often took to collecting wood from green trees instead, further accelerating the pace of degradation. Appiko activists reasoned that for the sake of the forests the towns people should be encouraged to use gas stoves for cooking and fuel wood should therefore only need to be supplied to the poorer sections of society. In an effort to reduce the people's dependence on forests for fuel wood, an Appiko activist developed the smokeless chula, an easy to light stove which used considerably less firewood. The stoves became increasingly popular amongst women as it decreased the time they needed to spend collecting fuel wood for cooking. The forest department went on to popularize the smokeless stove in all districts. Since then further environmentally friendly practices have been installed around people's homes to conserve resources; bio gas plants, using cow manure to create fuel for cooking; solar panels for power and storage tanks for conserving water.

Awareness programs include the importance of protecting forests from fires. It is important to keep a close watch, especially amongst dry and moist deciduous forests during the dry season. Efforts are made to motivate local people to check the logging carried out by contractors and to ensure their own extraction of dead and fallen trees was not causing unnecessary damage to other trees.

Due to poor management of Betta lands and expanding areca nut gardens, farmers increasingly have to rely on surrounding forest land to supply their leaf manure. New areca nut farmers who do not own Betta lands are also putting pressure on the forests to fertilize their plantations. The process of collecting leaf manure rids the forest floor of nutrients and causes considerable damage to small saplings. To prevent further degradation of surrounding forests, one of the major tasks undertaken by Appiko activists has been to educate people on how to improve the health of Betta lands and make them more sustainable. Old practices, such as firing grass lands to create a patch of new grass with the early rains had to be discouraged as it proved to have detrimental effects on forests and the quality of new grass. Likewise the cutting of foliage to prepare compost in the rainy season is discouraged as it means trees are unable to regenerate. People are encouraged to refrain from cutting small saplings for fuel. With activists leading by example, over time local people have experienced the merits in refraining from these practices, as their resources are now beginning to renew themselves.

A major cause of destruction is the encroachment of forested land by marginal farmers for the cultivation of crops. The opening up of forestry roads into remote areas further accelerates this problem. The removal of tree cover and burning of forests by encroachers leads to loosening of soil which is in turn washed away by heavy rains leaving a barren hard rocky, laterite cover in which nothing grows. Cases of encroachment are reported to the Forest Department for further action.

Overgrazing of livestock within reserve forests has proven to be problematic as it eventually leads to trampling of young regeneration, compaction of soil, reduced infiltration and consequent increased run off whilst the removal of vegetative cover increases the likelihood of soil erosion (Saxena, Sarin, Singh & Shah, 1997). As the majority of livestock owners are landless or small land owners of a few acres, regularly livestock will be taken to forests for grazing. The large areas of pasture land that have been degraded due to the installation of plantations and the subsequent invasion of Eupatorium weed further accentuates the problem. Villagers are encouraged to increase area under pasture by planting more trees and grasses for fodder on common lands and to allow for regeneration of degraded forest land by refraining from over grazing in such areas.

Although it is an ongoing process the awareness of village people has increased considerably. Though many are disheartened by the forests departments own lack of awareness, they are trying to maintain proper management efforts like replanting of barren lands and allowing sufficient time for regeneration, watching out for fires and illegal forest users.

### **5.5 Afforestation**

From 1987, following the ban on green felling the movement began to give more attention to the regeneration of degraded land. Forests around villages were diminishing as a result of being treated as an open access resource and if not replanted they ran the risk of being invaded by obnoxious weeds and bushes which in turn affect grass production and grazing. Activists pushed for the 5 F philosophy of planting of trees for: fruit, food, fuel wood, fodder, fertilizers and fibre not for commercial plantations. There was much work to be done in the planning and organizing of afforestation camps. Many villagers volunteered their services in planting programs and began to collect seeds to be planted on barren land. Learning was basically through a system of trial and error. For example people found that seeds would not germinate where the top soil had been washed away. Hence nurseries were established with native seedlings being provided by the forest department.

### **5.6 Resolving Conflict**

When the tree felling was stopped the Forest officials provoked the town people to oppose the movement saying due to them they now have no fuel wood. However this was not true, the use of dead and dieing trees were still available for fuel wood and was more than suffice in providing demand from the town people. Also with the introduction of smokeless chulas the demand was not as

high as in the past. In some rural areas the forest department took back all concessions and privileges allowed to the local people saying that Appiko was responsible. This was falsely implied as Appiko was always stressing the needs of the local population should come before outsiders. PSK acted as a support office for village people in such cases of mistreatment, if necessary meetings would be arranged between officials and local people to resolve issues.

At some point the forest department asked the police to come to the forest to stop the activists from intervening. But the police new the rural people were not concerned with violence and so would not bother coming. Their have been instances, especially as Appiko was gaining its popularity base when politicians attempted to make political capital out of the movement. In 1986 the Appiko movement was launched in the Udumbe forest of Kodagu district (See Box of Section 5.1 Saving the Kavery from running dry). The organizers, having no previous experience of dealing with politicians, where taken advantage of by both ruling and opposition party politicians. The situation changed with a visit from Sunderlal Bahuguna, who knew from his past experience with Chipko in the north that politicians had no role to play in such people's movements. Keeping Appiko free from active party politics has largely succeeded in preventing politicians from misusing the people's movement. Hence there was a re-launching of Appiko in the Kadogu District, this time on a non political basis. Politicians were urged to support the cause but to keep their vested interests away.

At its onset the forest department was irritated at the movement for bringing a sudden halt in timber flow, not just for fuel wood supply to towns but to other forest based industries such as saw mills. Harassment by forest officials was an attempt to create an ill feeling against Appiko, but instead it created more distrust towards the forest department. As villagers where being denied access to the forest they where no longer receiving any benefit from watching over the forests in case of fires or smugglers hence the forest department lost the peoples cooperation in forest management. Over time the forest department realized their bad rapport with the local people was not helping their situation and took small steps to win the confidence of the people. They organized afforestation programs in villages and facilitated Joint Forest Planning and Management where forest officials attempted to work along side Village Forest Communities (VFC) in taking care of forests.

### **5.7 Sustainable Development**

Although destructive policies have at large been stopped, the big development projects of today such as dams, mines, pulp and paper factories, nuclear power

operations, ports, roads and rail lines are causing damage to forests equivalent to that of unsustainable policies.

Their has become a strong need for environmentally conscious people to raise awareness of sustainable development and push for a more environmentally conservative approach to new development plans and existing industrial practices. During the post independence era, Uttara Kannada and its abundance of rich tropical forests became a popular region for the development of forest based industries. Through media attention activists endeavored to highlight the strengths and durability of traditional village based development as opposed to the un-sustainable industrial development that was taking place. It is interesting to note that according to a survey carried out by the Government of Karnataka in 1999, the percentage of people living below the poverty line in Uttara Kannada is lower than in Bangalore, even though the cash income of people in Uttara Kannada is generally lower than residents of Bangalore. The major providing factor of such high quality of life and economic security amongst the rural people of Uttara Kannada is the natural resource base provided by the Western Ghats forests. The peoples traditional livelihood systems, based on agriculture, horticultural farming and fishing have a high dependence on the mixed natural forests, fertile land, organic manure, adequate rainfall and unpolluted rivers and coasts. Non timber Forest Products (NTFP) such as medicine, fruits and bamboo are of great importance to the livelihood, food security and employment of local people. According to a study carried out by Prakruti, the people of Uttara Kannada collect 235 NTFPs of which 140 NTFP are collected regularly (Hedge P., B. & N., 2000). NTFPs are widely used for edible, agricultural, commercial and medicinal purposes.

The movement is dedicated to protecting this survival base of people from destructive development projects undertaken in the Western Ghats. There exist many examples of people's struggles against planned development and unsustainable industrial practices. One of the strongest anti nuclear movements in India was launched against the Kaiga Nuclear Power Plant on the banks of the Kali River. The movement forced the State Government to hold a national debate on the issue of nuclear energy. Nevertheless, the State and Central Governments forced the nuclear plant on the people of Uttara Kannada (Deccan Herald, 2003). Overtime the movement has developed a wider contact base which has enabled them to tackle mining and forestry issues throughout the whole of the Western Ghats. Activists from the different states of Karnataka, Goa and Kerala exchange visits to learn from each others programs and activities, often combining plans of action. People on the coastal areas launched a movement against the caustic soda factory near Karwar which was polluting seawater, effecting aquatic resources and the livelihood of fisherman. Their efforts forced the factory to build a pipeline to transport effluent further out to sea. The fisherman in Tadari village of the Kumta taluka launched a strong struggle against a proposed barge

mounted power plant. Development plans would destroy the backwater ecosystem that supported the livelihood of at least 5,000 fisherman. Due to local's strong resistance, the Government had to cancel the project (Deccan Herald, 2003).

Appiko plays an important role of raising local people's awareness of the potential damage to be incurred by proposed developments. Assessments of benefit versus loss are useful to formulate reasons for opposition, in addition the direct response of local people affected by any development is used to lobby against politicians and bureaucrats. Existing examples of loss to the environment and people due to similar development is often also used to support the people's opposition. Further the international importance of forests must be considered. Views and facts found through awareness campaigns help to convey the message to the media.

A recent example, is Appiko's pioneering against the destruction of 2000 hectares of natural Western Ghats forests to construct the Ankola to Hubli Rail Line (See Section 7.4). While conducting a series of meetings in the remote hill villages, they were able to awaken farmers to the disastrous impacts of the rail line. As well as displacing farmers, dividing the forest in such a way would hinder water courses, cause hardship to wildlife, make way for further landslides and open the area up for increased timber smuggling. Despite their loss, people were to be of no benefit to the development as it was proposed mainly for the transport of iron and manganese ore from Bellary Hospet. People surveys and Cost/Benefit analysis models helped to convey the problem of establishing the track to the advisory committee. In view of peoples observations the Central Government rejected the proposal.

In the place of destructive urban industrial based development models the movement seeks to install an alternative development model in tune with the natural environment. Based on the basic principle that development should have a positive impact on the fragile ecology of the Western Ghats and its people. Any development strategy must be fully participatory based on long term prosperity for all. In 1999 a workshop was organized in Sirsi to discuss an alternative development model for the district. The following evolved:

- Small scale agro based companies that can employ a number of people i.e. using agricultural wastes to make paper, processing of crops.
- Expanding horticulture by providing marketing and storage infrastructure.
- Employment through the harvesting of Non Timber Forest Produce (NTFP).
- Small scale units for the manufacture of plant based medicine.
- Eco-tourism through farm stays, promoting the areas numerous waterfalls, historical places backed by forest and coastal areas of natural beauty.

- Development of basic infrastructure for information technology and electronic based industries.

By the alternative development model the movement seeks to maintain harmony with nature whilst providing job security for local people.

## **6.0 IMPACTS**

### **6.1 Saving Forests**

Local people became aware of the importance of forests and decided to launch a struggle to save them. Locals organized meetings amongst themselves to discuss issues and methods to oppose deforestation. Villagers would guard the forests day and night in watch of forest contractors who came to take trees. Due to the demonstration in Salkani, the forest minister visited the monoculture plantations for the first time. Members helped to carry the message and their experiences with the movement to other threatened forest communities in the Western Ghats.

The negative impacts of green felling and monoculture plantations were brought to the attention of forest officials, scientists, locals and the media. Foresters admitted the impracticality of the policy of logging for two green trees per hectare. Due to peoples dedicated opposition a total ban was installed in 1990 on the felling of green trees within evergreen forests of the Western Ghats. According to studies carried out by the Forest Survey of India (FSI), dense forest area slightly increased between 1991 and 1993 and open forest area correspondingly decreased. It would be reasonable to assume that this was a direct result of the ban on green felling installed in 1990. The present status of the forests is unavailable due to the absence of surveys. The moratorium on felling of green trees continues in Karnataka to date and has been recognized as an excellent model for forest conservation in India. It is also believed that this policy change is responsible for saving the fragile tropical forests of the Western Ghats. It has meant large areas of degraded forest have had sufficient time to regenerate.

The Forest Departments destructive process of extraction of dead and fallen trees was brought to the attention of the State Government. Forest contractors were advised to respect logging rules whilst harvesting timber and building new roads inside thick forests.

Action was taken against smuggling and illegal felling of trees have been brought to the attention of the forest department by local people. As a result of extensive lobbying against the anti forest planting regimes implemented under the WGFP, the KFD became aware of the importance of forests to VFC's and the failings of monoculture plantations in their respects.

Despite changes in forest policies, destruction of forests closest to people is still a concern and increasingly people are becoming dependent on another form of cash income. As people are no longer relying entirely on the forests to supply their basic needs, their focus is shifting to other forms of earning a living, thus it

is becoming harder to organize resistance. It is now popular for young educated people to move to towns and cities where there are more opportunities for higher paying jobs. Over the years Appikos objectives have changed from saving the trees to planting trees, so simultaneously there is much less need for confrontation with loggers today.

## **6.2 Peoples Involvement**

The spreading of the movement from one end of Karnataka to the other even reaching some of the most remote forested areas where houses are scattered and located on steep slopes is a clear indication of the validity in the Appiko message. To communicate and organize groups in these remote areas was not always an easy task, luckily there was no shortage of motivation from a few individuals in particular to make it happen.

Before Appiko there was no communication between the people and forest officials. Influence from the movement means that village people are now able to have some say in the forest department's decisions. Villagers who were once under the impression that logging was part of the forest department's job and they could not intervene even if it was affecting their livelihood have started to become involved in the conservation process. Now local people will confront smugglers and illegal loggers, and seek further action against offenders. To some extent the helplessness is still there, but at least people know they have the power to bring positive change.

An example is given from the remote village of Gonsar, located on the crest line of the Western Ghats in Uttara Kannada district. The people launched an agitation to stop logging in their area, contacts were able to organize a joint field visit with senior forest officials including Deputy Conservator of Forests. They agreed to adhere to their rule of not felling any green trees and also not to build new roads in the forest.

The government realizing that they could not protect the forests through 'policing' methods passed an order to implement JFPM. Despite limitations of the JFPM the change in policy did endeavor to involve people in planning and management of natural resources. The end result was an increased interaction between KFD staff and communities. The involvement of Appiko and other NGO's in the WGFP and later with the FDA helped to strengthen VFC's and eventually enable local people to have more say in the management of JFPM projects.

### **6.3 Awareness**

The evolvement of Appiko indicates that a relationship between people and the forests exists, and in areas where it may not exist it is able to be created. Due to Appiko's strong connection to the knowledge and practices of village people they are easily able to see where there are faults in the management of forests and how they should be best addressed. It is a job foresters and ecologists have always struggled with as the majority remain alienated from forests, residing in major towns and cities. Appiko began as a movement to protect forests and the agriculture and livelihood systems that depend on it, over time it has transcended to a wider environmental consciousness and particularly the conservation of the Western Ghats. The ban on green felling is an excellent indication of enhanced conservation awareness on all levels.

Villagers have volunteered to replant surrounding degraded forest areas. In many places plots of land have been looked after so carefully they have been able to raise local species in what was once barren land. Women have formed groups, and through regular meetings environmental problems and solutions are being shared. Ladies started small nurseries and organized the planting of native saplings supplied freely by the forest department where needed. Appiko Chaluvalli has become a chapter in primary schools, motivating the younger generation to also plant trees and save forests. Pravitia (11yrs) of Gubbigadde village says, "If the forests are destroyed it will become too hot and there will be no forests to play in". Many schools have since begun planting fruit trees within school grounds. Through the younger generation's active involvement in nature camps and afforestation, they too have become conscious of the importance of forests to the Western Ghats and the threats to it.

The legacy of environmental struggles from forest protection to sea to nuclear power is a further indication of the high level of awareness among the people of the Western Ghats. Now people are thinking before cutting the trees and taking the initiative to plant more trees. Kashuu Hedge of Sheegehally Village in Sirsi District feels that once the awareness is there people learn to love the forest, "We have been reminded we only have one earth which is our home, like a great grandparent it is our duty to protect it" he says.

### **6.4 Conservation of Biodiversity**

Due to conservation efforts natural and semi natural forests still exist in the Western Ghats. Few of them are totally undisturbed, still areas can and do maintain significant levels of biodiversity. Even with the practical problems in management of forests, such as the extraction of dead trees from forests, the building of roads, smugglers, encroachments and developments the ban on

green felling has enabled large tracks of forest to regenerate. Their remains the potential for original species to re-emerge if regeneration of the natural ecosystem is able to continue. Thus, the need for total conservation of biodiversity is perhaps the most inclusive value to install in people. Results have shown that life supporting systems can renew themselves given the opportunity and supporting policies.

## **7.0 ONGOING MOVEMENTS**

### **7.1 Kali Bachao Andolan (KBA)**

Kali Bachao Andolan or Save Kali River Movement was launched by the people of Kali valley along with Parisara Samrakshana Kendra (PSK) and several local community organizations in April of 2003. The movement is committed to building awareness of the threats to the Kali River, one of the four most important rivers flowing from the evergreen tropical forests of the Western Ghats of Karnataka. Originating at Kushavali on the boarder of Karnataka and Goa, the river runs a total length of 184 kms before reaching the Arabian Sea at the port town of Karwar. The Kali River is a lifeline to some 4 crore people of Uttara Kannada District and supports the livelihood of tens of thousands of people including fisherman on the coasts of Karwar (KBA Press Note, 2003). Kali in Kannada means "black", the rivers name refers to the dark colour of its manganese rich waters. Flowing through one of the 18 biodiversity hotspots of the world, its riverbanks host several endemic species of plants and vertebrates and its mangroves are an important breeding ground for fish and aquatic life on the river.

For decades the ecosystem of the Kali River basin has been threatened by the construction of dams, extensive mining activities and industrial pollution. Currently there are six hydel dams across the river Kali, and the Government in collaboration with the Karnataka Power Corporation is attempting to build a seventh. Already the construction of dams has submerged more than 32,000 acres of tropical forests and displaced thousands of people. Further deforestation was undertaken to rehabilitate the affected people. Totally 1600MW of electricity is produced by the Kali River of this a meager 17MW is required by Uttara Kannada itself. The government had plans to submerge a further 210 hectares of tropical forest to produce an additional 18 MW of power from the seventh dam. However, a public hearing in 2000 opposed construction of the dam after the projects Environmental Impact Assessments were found to be fraudulent by PSK (Parisara Samrakshana Kendra, Sirsi) and another NGO (Environmental Support Group, Bangalore).

For decades the Kali valleys rich source of manganese, iron, limestone, sand and atomic minerals like uranium and rocks were exploited by mining. Due to pressure from the environmental movement, a total ban was placed on mining activities within the Kali catchment. Despite the ban, illegal sand mining continues at an alarming rate particularly in the Supa dam submergence area. The large areas of forest cleared for mining activities give way to topsoil and river bank erosion, leading to the silting of streams and reservoirs. Industries situated on the banks of the Kali river, in particular the West Coast Paper Mill in

Dandeli and the Kiaga Nuclear Power Plant are major sources of pollution, having serious impact on aquatic flora, fauna and human health.

The following two main **objectives** have been developed by the KBA:

- To organize the people of the Kali River valley against the problems of dams, mining and pollution from industrial companies.
- To evolve an ecologically sound development plan to ensure livelihood security for the people and wild life of the Kali Valley.

In order to raise awareness on conservation of the Kali River, in 2003 a padayatra following the river bank was carried out by local people and environmentalists from different regions. The padayatra was an excellent opportunity for volunteers to survey the areas environmental situation and collect data from various stakeholders. Investigations found that river bank villagers are facing severe water problems. Several people have gastrointestinal problems and their cattle and crops are being affected by polluted water from the river. The Peoples Science Institute (PSI) of Dehradun and KBA carried out water analysis of various places in Dandeli where pollution was taking place. Protests have been launched by KBA to highlight the importance of the Kali River and the concerns of the people of Kali valley. A demonstration has been held in Dandeli, where the Paper Mill is discharging untreated effluents, similarly protests have been carried out in villages suffering from polluted water and in the sand mining area. The movement's true commitment to protecting the Kali River by effective action was shown by their peaceful protest in Bangalore as part of World Environment Day (June 5<sup>th</sup> 2003). They demanded that no more dams be allowed on the Kali River and that pollution from the West Coast Paper Mill and illegal sand mining on the Kali River should be stopped immediately. With the demands of the KBA receiving support from people all over the country, a memorandum has been submitted to the Chief Minister of Karnataka explaining the various threats to the Kali River and urging him to take action against these threats (KBA, 2005).

The overall impact of the campaign has been a success. The issue of conservation of the Kali River and the threats to it has been brought to the attention of local people, media, administrators and bureaucrats. Discussions have been held with Chief and cabinet ministers to conserve the Kali River. Illegal sand mining has been largely stopped. Although action has not being taken fully by the Paper Mill, they have agreed to install a proper water purifying systems and to give compensation to those affected (KBA, 2005).

## **7.2 Save Honeybees Campaign**

To preserve the unique diversity of indigenous honey bees found in the Tropical Forests of the Western Ghats NGO, Prakruti of Sirsi launched a Save Honeybees Campaign (SHBC) in 1992. The Western Ghats region is the main area for beekeeping in Karnataka, contributing approximately 70 percent of its total honey production. The main types of Honey Bees found in the region are *Apis dorsata*, *Apis cerana*, *Apis florea* and different species of stingless bees. People of the forests have been collecting honey from the wild for religious and medicinal purposes for centuries and honey remains an important Non Timber Forest Product (NTFP) amongst tribal and village people. Traditionally bees were kept in small earthen pots and wooden logs and harvested only once in a year, before monsoon (Prakruti, 2001). After the introduction of modern beekeeping in the 1930's, the government pushed the exotic *Apis mellifera* honeybee into the region. However, due to lack of understanding of exotic species management the average beekeeper encountered many problems beyond their comprehension and generally the performance of the exotic honey bee within the Western Ghats has been unproductive. Realizing the difficulties in establishing *Apis mellifera*, the saving honeybee campaign was launched to create awareness of the importance of conservation and propagation of the indigenous species of *Apis cerana* and *Apis dorsata*.

To strengthen the campaign, Prakruti carried out a Study of Honeybees in Tropical Forests of the Western Ghats. The study provides comprehensive scientific information on bee flora and fauna and the current status of beekeeping in Western Ghats forests. It was found that with the increasing popularity of honey for household consumption, there is now a lack of trained modern beekeepers to meet the demand for honey in the market. The diversity of flowering plants and rich climate of the tropical forests provide a great opportunity for development of apiculture in this area. Thus the campaign also aims at promoting modern beekeeping management practices so that more forest dwellers are able to make beekeeping an economically viable activity. Beekeepers with technical experience are able to generate additional income from the production of apiary by-products such as beeswax, pollen, royal jelly and venom. Workshops have been conducted as part of the campaign to train traditional honey hunters and those interesting in learning the technical skills of modern beekeeping as well as tackling practical problems concerning pests, predators and diseases. The campaign targets training towards women and youth as if trained properly in beekeeping there are great opportunities for creating a dignified means of self employment. Highly educated youth are encouraged to take up beekeeping as an enterprise, with the possibility of undertaking higher responsibilities such as the organization and implementation of beekeeping development programs in the future. Government programs have been undertaken in the past but training methods proved impractical and most

beekeepers remained unconfident in bee management and the necessary technical skills required.

The Saving Honeybees Campaign further promotes the importance of regeneration of natural forest, with the need for more flowering trees within plantations so flowers are available all year round. Honeybee's natural habitat is threatened by forest fires and the extraction of dead trees for fuel wood. Such practices are deterred, alternatively clay pots are recommended to replace nests sites. Training courses are helpful in bringing honey hunters and beekeepers together to share and develop sustainable harvesting methods as well as developing proper marketing channels for the sale of honey.

Honeybees enhance the diversity of Tropical Forests and provide an opportunity for forest dwellers to obtain a dignified income from beekeeping. Hence a campaign to preserve indigenous honeybees and enable the exchange of skills for the sustainable management of honeybees is well needed.

### **7.3 Sustainable Harvesting of NTFP**

The tropical forests of the Western Ghats region are well known for their production of Non Timber Forest Products (NTFP). Over the years the conversion of natural forests into monoculture plantations and the extraction of timber for forest based industries have had negative impacts on the availability of the wide variety of NTFP species. The collection of NTFP supports the livelihood of thousands of people, providing cash income and food security. For decades the KFD enabled the extraction of NTFPs without any understanding of the inventory or importance of the resource (Prakruti, 2000). Prakruti is dedicated to creating awareness amongst policy makers and forest users of the importance of conservation of NTFP resources for the enhancement of ecological diversity. To determine the dependence of forest communities on NTFPs an extensive study of Non Timber Forest Produce in Uttara Kannada, Karnataka was undertaken by Prakruti in the year 2000. The study exposed the large range of species used by forest dwellers for commercial, edible, non-edible and medicinal purposes. Of the 235 NTFPs found in Uttara Kannada, 140 were found to be collected regularly. The relationship between forest communities and the collection of NTFPs seemed to be of great importance both ecologically and socio-economically (Prakruti, 2000).

If carried out sustainably, the harvesting of NTFPs is a far more ecologically viable activity than the harvesting of timber. Unfortunately due to market pressure certain NTFPs once available in the plenty are under threat due to over extraction to meet demands. As there is no clear government policy towards the sustainable harvesting, products are open to exploitation. One example is the

over extraction of Uppage (*Garcinia gummi-gatta*) an orange like fruit. Traditionally Uppage seeds were collected by Havyak Brahmins for extraction of oil and the rind stored for use as a tamarind substitute. In the last 10 years the rind has gained higher commercial importance for its Hydroxy Citric Acid (HCA) content, now the product is being exported to other countries including USA and Japan to be used for reducing fats. Market pressure has resulted in the harvesting of un-ripened fruits, chopping of branches and the threat of extinction of the species. Other species found in the natural forests of the Western Ghats vulnerable to extinction are; Rampatre (*Myristica malabarica*) a wild relative of nutmeg, used as a spice and for making colours; Dhoopa (*Canarium strictum*) its resin used in incense (Agarbatti) as well as in paints and varnishes; and many species of cane a versatile resource well known for its strength, durability and uniformity. By increasing collectors and policy makers understanding of NTFP resources, Prakruti seeks to facilitate policy changes towards sustainable harvesting and enhancement of NTFP resources.

Additional studies carried out by Prakruti in 2003/2004 looked at the economics of NTFP and the impacts of harvesting pressure on resources. To create awareness and ensure a sustainable future for NTFP, Prakruti organized a number of workshops on sustainable harvesting techniques of NTFP in various villages of Uttara Kannada. During workshops local people have an opportunity to express their own hardships in protecting forest resources and come up with community based action plans to overcome these problems. Realizing the need for conservation, local people and Village Forest Communities (VFC) will often take the initiative to ensure constant monitoring of sustainable harvesting practices are being carried out. NTFP conservation is further encouraged through planting and allowing regeneration of NTFP on private land and in natural forests. Interaction with forest officials means they are also more likely to take action against unsustainable harvesting practices.

Field demonstrations to create awareness and conserve the regions medicinal plants have been carried out with the assistance of traditional Ayurvedic doctors of the area. Such demonstrations have helped in identifying and recording unknown medicinal species. A further specific workshop was carried out to conserve and develop the sustainable harvesting of gums and resins. To enhance the livelihood of NTFP collectors marketing workshops have been administered. In particular these workshops aim at improving processing and storage skills to increase the returns to collectors. In most cases the processing involves peeling, drying, de-husking and grading of the product depending on quality. Uppage is processed for its rind, as the fruits are harvested during the monsoon months the rinds are predominantly dyed using fuelwood, which has destructive impacts on forests. To reduce the pressure on forests Prakruti initiated the installation of community dryers in remote villages.

If NTFP are harvested in a sustainable way they provide an opportunity for sustainable management of tropical forests whilst enhancing the livelihood of forest dwellers. Thus there is a great need for the promotion of sustainable policies which preserve NTFP resources as well as the interests of forest dwellers.

#### **7.4 Hubli Rail Line**

The government of Karnataka is proposing to construct a 168km long rail line connecting Hubli to Ankola. The rail line is proposed mainly for the transportation of iron and manganese ore from Hospet, Bellary, Prakruti and PSK are opposing the development as its construction entails the destruction of 2000 hectares of natural Western Ghats forest and is to be of little benefit to the local people. Meetings conducted in remote hill villages helped to raise awareness and lobby for support against the rail line. Villagers felt it was not feasible to build a rail line at a cost of 1153 crores for the transport of natural resources which are likely to be totally depleted in a few years. Many farmers feared displacement and loss of agricultural land. People had already experienced these kind of losses during the construction of the national highway. The highway now provides adequate transport facilities for local people so a high percentage feel it is unnecessary to build a rail track for the benefit of passenger traffic. The rail line could create new employment opportunities, but these are unlikely to be available to farmers and laborers who would lose their employment in the process. Villagers have pointed out the difficulty forests and wild life would face. The opening up of remote forest areas leaves rare natural species vulnerable to timber smuggling and destroys the natural habitat of wild life, forcing them closer to civilized areas. Local peoples concerns over establishment of the rail track were recorded and presented to the media and advisory committee. In view of these observations the Central Government has rejected the proposal for now.

The rejection letter once again raises the debate of development versus destruction. Still politicians are determined to fight for the construction of the rail line, claiming for the sake of development the region will have to sacrifice its forests. But for the benefit of whom? The objection of activists and local people to destructive developments both of the environment and their own livelihood is fully justified. Their efforts deserve all the help and support they can muster to retain the vital connection between humans and nature.

## **8.0 CONCLUSION**

The fragile ecosystem of the Western Ghats plays the vital role of supporting and regenerating various life support systems in Southern India. Its cross section of ecological zones from the mangrove forests of the coast to the thick evergreen forests of the crest-line and the dry deciduous forests of the eastern plateau, support a rich diversity of flora and fauna species. The variety of rural communities residing amongst the Western Ghats, share a common dependence on forests to support their livelihood, food security and employment. They collect wood for fuel, fruits and berries for food, fodder for fertilizer, medicinal herbs and a variety of NTFPs depending on their area. The tradition of agriculture has been able to flourish largely because of the conducive environment of its natural forests.

Since the British rule took away peoples rights over the forests, forest policies have been largely geared towards the production of commercial timber and maximizing revenue. Monoculture species meant a lack of plant variety to support agriculture and livelihood systems and a loss in biodiversity balance. Appiko arose spontaneously by the people whose survival was under threat due to the destructive forest policies. Leaders of the movement came from amongst the people and their role has essentially been to raise awareness of the importance of Western Ghats forests and to motivate local groups to stand up for the forests.

Appiko's first objective of saving the remaining tropical forests of the Western Ghats, involved lobbying against the un-sustainable forest policies of clear felling for conversion to monoculture plantations, the leasing of forest land to supply timber to plywood factories, and the improper implementation of selective forestry policies. They successfully involved local people to impose a ban on the felling of all green trees within the tropical forests of the Western Ghats in 1990. Thanks to the timely action of the Appiko movement for saving forests from the axe, we can still enjoy areas of natural old growth forest in the area today. Joint forest surveys and meetings with forest officials, scientists, locals and the media helped to resolve issues and highlight reasons for proper implementation of management principles. In some cases forest officials have made attempts to fulfill villager's demands, still there is a need for people to monitor logging activities and check for illegal forest management practices. Appiko's involvement in participatory projects such as the WGFP has enabled the strengthening of the most disadvantaged groups in society. Participants on all levels have a greater understanding of the importance of preserving the Western Ghats forests for the future of humanity rather than follow the age old policies of exploitation for commercial gain.

Through awareness campaigns and afforestation camps Appiko installed the value of biodiversity and the need to conserve the natural forests of the Western Ghats. People have volunteered to replant depleted forest areas with indigenous species of the 5 F trees for Food, Fruit, Fodder, Fuelwood, Fertilizer and Fibre. As a result the ecological balance has been able to return to some depleted areas.

Leading by example, activists of Appiko have changed harmful management practices of local people, such as firing grasses and lopping of trees in the rainy season. Alternative energy sources such as the bio gas plants and solar power are now used to conserve resources. Although it is an ongoing process the awareness of village people has increased considerably. To stop destructive development projects from further depleting the area of its natural resources, Appiko and other movements have spontaneously arisen throughout the State. Campaigns cover a wide variety of issues from saving rivers, preserving indigenous honeybees, promoting sustainable harvesting of NTFP to opposing the construction of a railway through natural forest. Any movement in the best interests of the environment and the needs of local people, deserves recognition and full support.

The role of the movement in supporting and protecting the traditional livelihood of people based in the Western Ghats forests, exists harmoniously with preserving and regenerating the areas rich biodiversity, reducing pollution and the impact of global warming. Appiko, a people's movement for the eternal prosperity of all.

## **9.0 GLOSSARY and ACRONYMS**

### **Glossary**

Betta Land : Forest land allocated to areca garden owners for exclusive collection rights of leaf manure

Karada : Fodder/ Grass

Lakh : 1,00,000

Panchayat : Village level administrative unit

Reserve Forest: Government forest

Taluka : An administrative unit in the district

### **Acronyms**

FDA : Forest Development Agency

JFMP : Joint Forest Planning and Management

KBA : Kali Bachao Andolan (Save Kali River Campaign)

KFD : Karnataka Forest Department

NTFP : Non Timber Forest Products

ODA : Overseas Development Administration

PSK : Parisara Samrakshana Kendra (Environmental Conservation Centre, Sirsi)

SHBC : Save Honey Bees Campaign

VFC : Village Forest Communities

WGFP : Western Ghats Forest Project

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