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# Development or Destruction

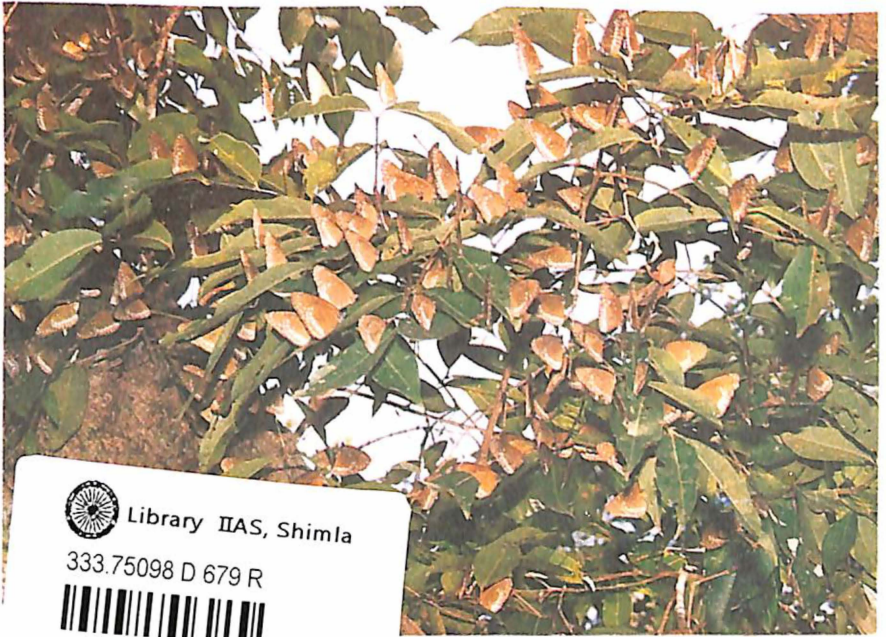
**A Study of Uttar Kannada  
District, Karnataka**

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## I- A Clash of Development Models

At a time of increasing realisation of the many-sided value of biodiversity, it would appear to be nothing less than criminal if vast areas of the richest biodiversity were to be allowed to be submerged by dams or lost to reckless mining and clear felling of trees. Yet this is precisely what appears to have happened during the last few decades in Uttar Kannada district of Karnataka, a district which is known to shelter 1741 recorded species of flowering plants and 420 species of birds within an area of 10200 sq. km.<sup>1</sup>

Uttar Kannada extends from the west coastal zone bordering the Arabian Sea towards the Western Ghats hills including, in ecological terms, two evergreen forest zones, a moist deciduous forest zone and a dry deciduous forest zone. This provides conducive conditions for rich biodiversity to flourish within the geographical confines of a single district. According to one study, 25% of the 5km x5 km. grids of this district have 6 or more major habitat types per grid, the median number being 3.72 (see paper by R.J. Ranjit Daniels and others in "Environmental Conservation," 1993).<sup>1</sup>

What is more, villagers of this district have a rich tradition of protecting forests and biodiversity. A detailed field study of a 5 km x 5 km area in the district's Southern Evergreen zone revealed the presence of 54 sacred groves and 45 individual sacred trees. It is only because of the existence of such a protection tradition that the 20th century could inherit such a rich biodiversity despite all the ravages brought by colonial rule and the commercial pressures unleashed under it. In the early years of this century this district had a forest cover of over 80%.

But it is tragic that instead of building on these traditional strengths, recent decades have witnessed a plunder of forests and biodiversity and its ruthless destruction to feed

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the greed of commerce and industry. Even the legal protection of "sanctuary status" could not save the forests of Dandeli, even the sacred groves (such as Menasihani) were clear felled. Biodiversity rich forests were clear felled with absolutely no regard to considerations of ecology and sold to industry at rates which were several hundred times less than the prevailing market rates. No less precious forests were submerged under dam waters.

If the recent past has been a disaster, the future may be even worse. As Pandurang Hegde, a leading environmental activist involved in movements to save these forests for two decades says, " If all existing mega projects are examined together, nature here may be ripped apart. This district is an extreme example of destruction in the name of development."

Therefore there is a very real and strong need today to raise basic questions like, 'What is Development? What is sustainable development?' in the context of Uttar Kannada. Should we recognize the strength of tradition that clearly exists and build further on it? Or should we rip this apart by giant development projects which cause a lot of displacement hazards?

It is a very widely held perception that modern development brings a better and improved life. Traditional, village based, old technology based life is equated with backward life which gets improved as modern technology and development are brought in. It is interesting to examine this widely held view by comparing the most urbanized, highly developed district of Karnataka state with one of its most village based districts. Bangalore (urban) is a fully urbanized district of Karnataka. In sharp contrast, 75 % of the population of Uttar Kannada lives in villages and the remaining 25% of the population is mostly based in small towns which are closely related to the surrounding villages and in many cases are mere extensions of these villages.<sup>2</sup>

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The comparison of these two districts in terms of some commonly used development indicators reveals that the GDP per capita in Bangalore (Rs. 9242) is much higher than in Uttar Kannada (Rs. 5480). In fact Bangalore is reputed to be one of the most prosperous cities of India. Despite this, it is very significant that the percentage of people living below poverty line in Uttar Kannada (24.97 per cent) is much lower than the percentage of people below the poverty line in Bangalore (31.42 %).<sup>3</sup>

This is not a small difference but a very significant difference. Despite all the cash floating around in Bangalore, its mansions and shopping plazas that rival and surpass those of the capital city of India, despite all the concentration of high technology industry and even higher profit speculative trades, Bangalore has a much higher percentage of people living below the poverty line compared to the village based economy of Uttar Kannada.

Again, despite the widespread availability of medical technology and congestion of too many nursing homes and private doctors, life expectancy in village based Uttar Kannada still remains higher than in Bangalore (66.96 years compared to 65.78 in Bangalore). In fact village based Uttar Kannada has even managed to keep its infant mortality rate still lower (49 compared to 50 in Bangalore).<sup>3</sup>

In terms of gender related health indicators the situation in Uttar Kannada appears to be significantly better. Life expectancy at birth of females in Uttar Kannada is 70 compared to 66 in Bangalore. Health index of females is computed at 0.70 in Uttar Kannada and 0.64 in Bangalore. Contrary to common expectations regarding rural and urban life, mean age for marriage in Uttar Kannada is higher (22.35) compared to Bangalore ( 20.89).

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**Table 1**  
**Comparison of Bangalore (Urban) and Uttar Kannada districts**

	GDP Per Capita (in Rs.)	Population below poverty-line (as % of total population 1993-94)	Life expectancy at birth year 1991	Total infant mortality rate 1991	% of Households having neither electricity nor drinking water nor toilets 1991
Bangalore (Urban)	9242	31.42	65.78	50	2.88
Uttar Kannada	5480	24.97	66.96	49	33.55

Source - Human Development in Karnataka, 1999, Planning Dept. Govt. of Karnataka.

**Table 2**  
**Health Indicators- Women related comparison of Bangalore and Uttar Kannada**

	Bangalore	Uttar Kannada
Proportion of female population	0.474	0.491
Life expectancy at birth of females	66.10	70.00
Health index female	0.643	0.708
Sex ratio 1991	903	966
Mean age at marriage (female) 1991	20.89	22.35
Female infant mortality rate 1991	49	49

Source- Human Development in Karnataka 1999

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**Table 3**  
**Indicators of Social distress- Bangalore and Uttar Kannada**

	<b>Bangalore (Urban)</b>	<b>Uttar Kannada</b>
Molestation and rape per lac female population 1996	10.6	1.5
Dowry deaths per lac female population 1996	2.7	0.1
Male suicides per lac population 1996	24.9	4.7
Female suicides per lac population 1996	21.3	1.7

Source- Human Development in Karnataka 1999, one lac = one hundred thousand

It is also worth pointing out (see Table 2) that better health indicators for Uttar Kannada are recorded despite the fact that 33.5% of its households have neither electricity nor safe drinking water nor toilets while only 2.8% of Bangalore households suffer from this deprivation. Better health in Uttar Kannada therefore is only because of its gifts of nature which are now being destroyed.

Apart from these well known indicators of development there is also the question of quality of life. Most people in Uttar Kannada work hard yet lead a slow paced, relaxed life while the people of Bangalore lead a very hectic, restless life. The forests and garden based traditional life helps greatly to reduce the risk of greenhouse effect/climate change at global level, while the rapid increase in the number of carbon dioxide emitting vehicles on the roads of Bangalore adds to this risk. According to a paper presented at a conference in Bangalore in December 1998 by C. Rajashekhara Murthy, blood samples of Bangaloreans have a lead concentration which is twice the permitted level.

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Lead in blood beyond a certain level is known to cause brain damage. Another paper by H. Paramesh read at the same conference showed that the incidence of asthma in Bangalore among school children in the age group of 6 to 15 years was as high as 25% which is attributed mainly to air pollution. Bangalore also generates solid wastes to the extent of 2180 tonnes per day.<sup>4</sup>

In terms of social stability also, life in Uttar Kannada is much better, as is evident from much lower rates of social distress (see Table 3). Female suicide rate is 12 times higher in Bangalore while dowry death is 27 times higher.

Thus it is clear from the point of view of the commonly accepted indicators of 'human development', the 'quality of life' aspects that go beyond it and the broader responsibilities of protecting the environment of our planet (reducing global warming, protecting biodiversity etc.), clearly it is the traditional village and forest based development pattern of Uttar Kannada which is more durable than the 'urban-industrial' model of Bangalore. Why is the sustainable rural-traditional basis of Uttar Kannada then ravaged to support the ecology-ravaging, non-sustainable urban-industrial model of development?

Recent development projects in Uttar Kannada indicate that the main effort is to plunder its resources to provide more electricity, more minerals, more timber for the urban-industrial model while sacrificing the welfare of local villagers as well as forests and biodiversity.

At one stage nearly one out of ten persons in this district were threatened by direct displacement as a result of various mega projects in Uttar Kannada. Even today, despite the fact that some projects have been withdrawn or revised to reduce displacement under the pressure of people's movements, about 5 per cent of the district's population has either been displaced recently, or else faces displacement in the near future. On what basis is this approach justified?



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Actually the arguments in favour of the rural-traditional models of Uttar Kannada would have been even stronger (in terms of even better health, quality of life and less poverty) if the ecological destruction of the last few decades had not taken place. However if this destruction continues or accelerates, then it will not be long before the good health, quality of life and economic security of the village based life of Uttar Kannada will be a thing of the past. So action must be taken now to prevent further damage and restrict development to keep away the destructional aspects.

This doesn't mean that all aspects of the traditional system were good. To the extent that there are injustices to some of the groups, this must certainly change. We do not also want to imply that all aspects of modern development are bad. Some aspects of modern medicare are most welcome and have already made a notable contribution in reducing disease and mortality. Such aspects of development which bring better medicare and education to people are most welcome. But those projects which in the name of development rip apart the social and ecological fabric of the entire region certainly need to be opposed and challenged.

## **II - CRUCIAL ROLE OF FORESTS**

Forests have traditionally played a very important role in the life of the people of Uttar Kannada. Forests play a major role in getting adequate rainfall as well as supporting a large number of natural water sources from conserved rain water. From these water sources, farmers in distant villages can get clean drinking water as well as irrigation water for their gardens and fields. A government document of 1923 said, "The flow of water from the springs is fairly even throughout the year. This is mainly due to the regulation of flow by the Kans (sacred groves)." The report said that forests had upto 6 feet of rainwater."<sup>5</sup>

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Forests provide several fruits such as wild mango, jack fruit, tamarind like fruits 'murugila' with its nutritious juice and syrup. This district is famous for its mixed gardens of arecanut, coconut, banana, cardamom, pepper, betel vines, and other useful plants in which one plant's growth is supported by the growth of another plant - for example cardamom's small plant grows in the protective shade of the bigger plants/trees. These gardens get invaluable support from forests in the form of priceless leaf manure. 'Soppenabetta' lands are hilly forests but assigned to these garden owners by the forest department to fulfill their requirements of leaf manure and mulch (as well as fuel, fodder etc.).

According to Parisar Sarankshan Kendra, a voluntary group closely involved in protection of forests, nearly 140 types of minor forests produce (MFP) is already being collected by villagers while over 300 types of useful MFP is known to exist. These various kinds of MFPs meet various daily needs of villagers- ranging from fruits and medicines to natural soaps and even cosmetics. Forests also produce the essential raw material, most notably bamboos, to support the main livelihood of hundreds of artisan families. Artisan work includes bamboo and cane work, as also wood carving.

Communities of forest dwellers include the Halakki Vokkals in the foot hills, the Gowli pastoral people, Siddis, Khare Vokhals and others.<sup>6</sup>

The traditional protective relationship of people and forests is symbolized by the existence of several sacred groves as well as the protective management system that has survived in a few villages like Halkar and Muroon Kalabbe.<sup>5</sup>

In many villages, forest is worshipped as 'Kans' meaning sacred groves. Restrictions on biomass removal, closed hunting sections, and protection of individual species - all

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these practices also contributed to the protective relationship. In 1801 a British traveller Buchanan mentioned in his writings on this district the practice of people cultivating pepper inside the evergreen forests and the well managed leaf manure forests adjacent to the arecanut gardens. About the practice of sacred groves, he wrote, "These forests are the property of the Gods of the village in which they are situated."

With the advent of colonial rule in the 19th century the traditional protective system received rude shocks as the new rulers tried to extract maximum profits from forests. They plundered teak, rosewood and other trees for their commercial activities and classified forests arbitrarily to provide more scope for this. Simultaneously rights of local villagers were curtailed. Wingate noted in 1888, " I was greatly struck with the general destruction which has taken place of late years amongst the Kumta evergreens - they were in a far finer state of preservation 12 to 15 years ago."<sup>5</sup> In particular huge quantities of teak were taken away for ship building by the British. When natural growth of teak was exhausted, the British started plundering teak after clear felling natural forests.

The heavy commercial orientation of forestry practices unfortunately continued in the post independence period. Valuable forest produce was sold at dirt cheap rates to industries. In Uttar Kannada bamboo is very important for the life and livelihood of thousands of families, particularly basket weavers. It was priced at Rs. 5 per tonne by the British in 1860. One hundred years later, in 1960 it was sold to a paper mill at less than Rs. 2 per tonne when the market rate had scaled to over Rs. 3000 per tonne.<sup>8</sup>

A paper factory got 400000 tons of bamboo every year during 1958-1973.<sup>6</sup> This created a great shortage of bamboo and caused a lot of difficulties to villagers, particularly basket and mat weavers. In 1975 the plywood industry was allotted 61 species in evergreen forests.

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According to forest protection activists Pandurang Hegde and Balachandra Hegde, "The concessions given to these industries have caused damages in the canopy of natural forests with negative impact on regeneration of forests. The over-exploitation has changed the character of fragile forest ecosystem."<sup>6</sup>

In a 1989 study on forest based industries in Uttar Kannada, researcher Subhash Chandra noted, " The last four decades, ever since the arrival of modern forest based industries, witnessed forest degradation of unprecedented scale." Even sacred groves (Kans) have been exploited and rare species have not been spared. The working plan for Sirsi and Siddapur (1966) included 73 Kans from the deciduous area alone for exploitation. These Kans vary in size from 1.5 ha to over 400 ha each. The numerous kans served the purpose of sheltering various plant and animal species of the region. Ninety six trees in a one hectare sample exceed 30 m in height. Several villagers collect pepper, wild mangoes, wild nutmeg, medicines, honey from Kans which also store a lot of rain water and release it gently throughout the year in the form of springs. Even these Kans were not spared by the industrial logging of recent decades.<sup>5</sup>

Trees left untouched by commercial exploitation were also dragged into the logging plans, ignoring their special ecological roles. To increase short term revenue, the character of natural mixed forests was sought to be changed in the direction of monocultures of teak ( or other commercial species), continuing the colonial pattern. Area under teak plantations increased from 24338 ha in 1960-61 to 53354 ha in 1985-86 thus showing a rise of 118% within a mere span of 25 years. The 1960s witnessed the creation of Eucalyptus plantations in 8733 ha, but this attempt was abandoned due to the pink disease and lower yield.<sup>5</sup>

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## ***The Fragrance of Forests***

Mr. Y.G. Shirali, retired senior government officer says, "When I was a boy and entered the forests near my village, immediately I was greeted by the fragrance of the forests. This unique smell of forests does not exist now. My sons can't experience it. My grandchildren should at least know about it, so I am writing a note for them about this unique smell of forests. At that time there were so many herbs in the natural forests. The fragrance came from all these herbs. How can there be the same fragrance in the plantations that have been planted now in the name of forests. We used to enter the forests in the morning and come back in the evening. We never took any food with us. There were so many fruit trees in the forests that there was never any shortage of nature's own food. How can we get back those forests which had food for everyone and that unique fragrance that could only come from natural forests?"

In the decade of the eighties, the forest got some rest due to people's "hug the trees" (Chipko-Appiko movement) which resulted in a ban on felling of green trees at several places. Later Supreme Court orders extended this to a wider area, although recent fellings in the ecologically sensitive Sharavati forests reveal how these orders are being breached at several places.

But the destruction of forests has nevertheless continued, if not due to logging then due to the construction of dams, other mega projects and indiscriminate mining work.

With respect to the loss of forest cover associated with the power projects the district gazetteer says, "The greatest threat to the plant cover of Uttar Kannada is from proposals to develop the hydel potential of the rivers that flow through the steep and narrow gorges... the Kali Stage I with its

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dams, tunnels, power houses, penstocks, colonies, roads and quarries destroyed vast expanses of forest." This document estimates that dam projects can result in a loss of over 40000 hectares of forest land in the district. "The conversion of wooded valleys into sheets of water will make a marked change in the vegetation of the district."

In the middle of a heated debate on loss of forests caused by dams, the Sharavati Tail Race Project has been cleared for construction. Earlier in 1993 the High Court had given a stay order to stop the work on this project. In 1997 an experts committee appointed by the government suggested that this project should be shelved. The main argument against this project has been that a total of nearly 700 hectares of rich evergreen and semi-evergreen forests will be submerged by this dam. This area has as many as 88 taxa of plants endemic to the Western Ghats. This area has 25 species of various kinds of animal life which are endangered or threatened.<sup>9</sup>

However the government got another report prepared on the basis of which these objections were overruled and the dam is now under construction.

In a study by V.R. Hegde and others, multirate satellite data has been used to quantify the landuse/land cover changes in the Kali River Basin for the period 1975-88. Several dams have been constructed during this period on Kali river and its tributaries. This paper says that depletion in the forest area could be ascribed to clearing of forest for rehabilitation and also for accommodating project workers. The deforested/cleared area alone, as interpreted from the satellite data of 1975 has been estimated to be 5062 hectares. Speaking of other planned projects, this paper adds in the context of Aghanashini project that 7283 ha forest area is likely to be submerged by this dam project.<sup>10</sup>

Mining is the next most important threat to forests. As the gazetteer informs, about 26688 hectares of forest lands

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are under mining leases with 137 lessees (1983). Each labour colony consists of 100 to 150 people stationed inside or close to a forest. The labour force and the cattle they rear destroy the natural regeneration in about 8 to 10 km around the mine.<sup>7</sup> Recently some mines were closed by court's order.

In addition significant areas of forest have also been lost in recent years to railway lines (including Konkan railways) and electricity transmission lines. The Kaiga Nuclear Project was given 120 hectares of forest land. To compensate this afforestation is carried out in Mysore and Mandya districts!

It has been estimated that the proposed Hubli-Ankola railway line is likely to destroy forests over more than 1000 hectares of land.

In practice forests suffer from the combined impact of these several forces at work. A paper by R.J. Ranjit Daniels and others describes the extent of the combined impact even in protected (sanctuary) area of Dandeli, "Unfortunately it is now a sanctuary only on paper, for a major paper factory came up in 1958 right inside the sanctuary and a series of hydel projects on Kali river and its tributaries liquidated what remained of the northern evergreen moist deciduous forests through the 1970s."<sup>1</sup>

Regarding another forest zone of this district the same paper says, "The moist deciduous forest zone with its natural teak, has been most dramatically affected by commercial overfelling followed by conversion to teak and eucalyptus monocultures. It has also been converted into betel nut plantations and disturbed by several reservoirs of Kali Hydel Project."

In view of this many-sided destruction of forests, any effort to protect forests and wild life are certainly welcome. Unfortunately, some of the present day efforts tend to

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alienate villagers from forests and wild life instead of obtaining their cooperation in the protection of forests and wild life. This happens when sanctuaries reduce the rights of the forest dwellers, while national parks tend to uproot them from park area. This controversy was seen in Uttar Kannada recently in the context of the plans to create the Anshi National Park. According to the 'Directory of National Parks and Sanctuaries in Karnataka', the Anshi National Park was carved out of the Dandeli Wild Life Sanctuary as per the notification of 2nd September, 1987. The area of the park is 250 sq Km. The notification stated that this step to alter the limits of the sanctuary was considered necessary in view of the hydroelectric project, naval base, rehabilitation of displaced persons, roads, transmission lines, mining and other industries which existed inside it.<sup>9</sup>

But what about the rights of local people? According to researchers Kanchi Kohli and Manju Menon, the boundary of the National Park crosses two talukas of the district, namely Karwar and Joida. The mapping covers about 10 revenue villages, 7 in Joida taluka and 3 in Karwar taluka. The main communities of the area are Kanbi tribals, Desais, Marathis and a few others. They mainly rely on agriculture, cane work and minor forest produce collection. The agricultural land within the present boundaries of the National Park is about 591 hectares.<sup>9</sup>

Local people have organized themselves to protect their land and forest rights. There have been some assurances that the boundary of the Park may be redrawn to protect their livelihood, or else the Park may be changed to a sanctuary so that no displacement is legally necessary. However as no definite assurances have been given to people regarding protection of livelihood, they still face an uncertain situation at the time of writing. If they are displaced, the rehabilitation will also lead to the loss of forest (and hence wild life) elsewhere.

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Any efforts to protect forests and environment should safeguard the interests of forest dwellers and not alienate them by disrupting their livelihood. The livelihood of people should be protected along with the protection of environment. Even if environment protection involves some unavoidable loss of employment to poor people, then simultaneously efforts for alternative employment and economic rehabilitation should be made.

A much discussed project for improving forest-cover in this district is called the Western Ghats Forestry Project. This project is funded by the Department for International Development, U.K. (DFID- earlier ODA) and administered by the Karnataka Forest Development Department. The first phase of the project lasted from 1992 to 1999. To what extent has this project succeeded in its objectives? According to an independent study of this project by N.C. Saxena and others in Kanara Circle, most of project's activity is concentrated on 'Joint Forest Planning and Management' (JFPM) areas which may not constitute more than one per cent of the total forests of this district. "This has led to dilution of protection efforts on non-degraded forests which may have long term deleterious effects on such forests."

"Achievement of project purpose of evolving better systems of sustainable forest management is severely constrained by the parameters of restricting villagers' participation to only degraded forest lands with less than 0.25 green cover and even within these, by the benefit sharing deal. While the former constrains the development of a holistic management system for the forest area being used by the villagers as a whole, the latter tends to concentrate on villagers' and KFD attention on derivation of monetary benefits from plantation harvest, pushing the satisfaction of subsistence needs and strengthening of existing agricultural and livestock based livelihood systems into the background."<sup>11</sup>

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What is more, financial sustainability of *Acacia auriculiformis* plantation appears to be doubtful because of low monetary returns. In almost half of the project villages, the already marginalized sections of the communities are getting left out of the JFPM process. In heterogeneous villages, the village forest communities leadership was dominated by the landed elite "with a very real danger of their using JFPM to appropriate control over additional forest resources for increasing their political and economic power while further reducing the access of the marginalized to forests for meeting their basic needs."<sup>11</sup>

Balachandra Hegde, an environmental activist says that this project may have helped some coastal villages to meet firewood requirements near their houses, but in hill villages this is likely to have accelerated the fodder shortage, as several plantations have taken over grasslands and the main plantation tree doesn't provide fodder.

In a severe (soon to be published) indictment of this project, Pandurang Hegde has concluded,

1. The ODA funded forestry project puts the blame of forest destruction on the forest dwellers. It ignores the larger economic and political process that is the primary cause of destruction of tropical forests. The project envisages people's participation; however, in practice, it restricts access to forest resources through 'zoning'. The project is a continuation of commercial forestry into the tropical forest.

2. The aid is attached with strings. The most disastrous string is the perpetuation of commercial forestry through this project.

3. At the implementation stage the project has forced the forest dwellers to 'participate' in commercial forestry activities. It has evacuated poorest people from their food-growing land. It has violated human rights by denying people access to their survival base.

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4. Implementing the project has led to monoculture plantations which have eroded the biodiversity of the tropical forests in the Western Ghats, in addition to harming local people.

5. The need is to replace the commercial orientation of the project by conservation forestry to protect the interest of forests and people.<sup>12</sup>

M.R. Hegde, President of Village Forest Committees of Uttar Kannada says that in practice these committees are not empowered to play a decisive role and officials retain much of the control on decisions and use of financial resources. The concentration of firewood yielding species is not desirable as people prefer a variety of non-timber forest produce."

Savio Cavalho of Oxfam (India) Trust, Sirsi says, "During the selection of the species, it has been noted in several instances, that the women prefer fruit, fuel and shady trees, with emphasis towards meeting the households needs, while men preferred timber and fast growing commercial species to get immediate returns. The women's ideas were not considered good enough as they did not have any commercial and economic benefits. The FD found it effortless to convince the men about timber and other commercial species vis a vis NTFPs. This resulted in a gross reduction in the NTFP harvest and further resulted in commercialization of scarce NTFPs by contractors. This finally resulted in a loss and control over NTFPs, which was the domain of women.

"Foreign Aid has not been optimally utilized to protect the bio-diversity and improve the livelihoods of men, women and children. A substantial amount of the DFID Western Ghats Forestry Project has been used for fixed assets in the form of plantations, physical structures and vehicles.

"Encouraging more men, women and children in forest protection and management will not only improve the forest

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of the Western Ghats but have a direct improvement on the livelihood needs of the community. Communities should be given more autonomy in managing the forest and have a direct say in projects that may have a negative impact on their environment.

“The bio-diversity (plant and wildlife ) of Uttara Kannada can only be preserved by seeking the cooperation and involvement of the local communities.”

This recent efforts to check the depletion of forests have actually brought several new distortions and when to this is added the increased forest cover lost to dams, mining, power transmission lines and other projects, it is clear that the crisis faced by forests has actually got accentuated in recent years. Even the forests saved with great dedication by appiko (hug the trees) movement some years ago have not been spared at the time of laying down power transmission lines. The activists trying to save them again were thrown into jail. As Shivanand Kavale, an activist of appiko movement says, “ The challenge of saving the Uttar Kannada forests has become more grim today.”

### **III- Hazards and Risks of Mega Projects**

In recent years Uttar Kannada has seen the arrival and planning of several mega-projects which promise a lot of development benefits but also are known to bring a lot of new hazards. In some cases the benefits may accrue to outsiders but the hazards and risks will have to be faced by local people. For example the bulk of hydel and nuclear power generated here will be sent outside but the hazards of large dam projects and nuclear projects will have to be faced by the people living here.

The Kali Hydro Electric Project envisages the construction of a series of dams across the Kali river and its tributaries. The project involves constructing ten dams (big and small), five on the main river Kali and the rest on its

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tributaries like Tattihalla, Kaneri and Waki. Dams already constructed include Supa, Kodasalli and Kadra on the main river and Bommanalli and Tattihalla dams on tributaries.

Earlier a series of dam projects were also planned on Bedthi river. But following protests by local people against the large scale displacement likely to be caused by this, this has been converted into a series of "run of the river" projects.

Another major dam project is proposed on the Aghanashini near Hurlamane. The Sharavathi Tail Race Project is already under construction.

A factor which is of crucial significance for the welfare of the people of Uttar Kannada district is that some of the new projects are also changing the environment and geological conditions of the region in such ways as can pose a serious threat to the health and safety of the people and all other forms of life.

The question of reservoir- induced seismicity is one important aspect of hazards being discussed in the context of dam projects constructed or planned in and around Uttar Kannada district. At the national level this subject has been most heatedly discussed recently in the context of Tehri dam project but here the people are more familiar with the tragedy of Koyna dam where a reservoir- induced earthquake had taken a heavy toll of human lives as well as property. Admittedly the subject of reservoir-induced seismicity is a complex one and what has happened in the case of one project cannot be readily applied to another project, even if both projects are within the Western Ghat region. But a genuine fear exists that so many dam projects within the area of a single district can disturb the geology to such an extent that earthquakes may be caused. As Vijay Paranjpye, an expert on dams, has said in the context of this district, "We don't suggest that the Bedthi dam will lead to increase in seismicity, but that impounding of water in a

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large number of reservoirs within a small geographical area will definitely increase the chances of rise in seismicity. This factor has unfortunately not been investigated into by the project authorities. The argument therefore is not against dams in particular, but against having so many together."

These fears are enhanced further by the foundation problems encountered in Stage I of Kali Project. As an official publication has said, "The complex geology at the site is similar to those of Himalayan region and is a challenge to both engineers and geologists to build a concrete dam at this site. A number of weak zones are met with which need intensive treatment." Large scale mining activity and forest destruction taking place in the catchment of some planned dam projects can lead to heavy silting and eating up of water storage capacity of dams, leading to panic discharges and flash floods. People have not forgotten the Sharawati flood disaster when 110000 cusecs of water was released, causing great damage to over 27000 people in a stretch of 40 kms beyond the Lingamakki project.

The threat posed by the possibility of reservoir-induced seismicity gets magnified if we keep in mind the proximity of the upcoming nuclear complex at Kaiga within this district (this complex in fact will get the bulk of its water requirements from one of the proposed dam projects, the Kadra dam on Kali river). This threat is in addition to the geologically unstable conditions in which the Kaiga project is being located as pointed out by some critics.<sup>14</sup>

Independent of the threat of any such instability of seismic events, the Kaiga nuclear plant will be hazardous from the point of view of release of radio activity in the atmosphere as well as the aquatic ecosystem. The coolant water released into Kali river is likely to pose a grim threat to fisheries. While such hazards are associated with most nuclear power projects, there are also some hazards which

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are special to Kaiga project. As Nagesh Hegde, a journalist whose writings played an important role in drawing attention of the local people to these hazards says, "Hazards of these radioactive products will be manifold more in Kaiga because of the peculiar geo-climatic nature of the region. Emissions from the reactor invariably rise upwards through the Kaiga valley and sweep along the mountain ridges of the Western Ghats to be deposited on the grasslands, meadows, plantations and forests during heavy precipitation. It will have pronounced effects on the nomadic milkmen and other tribal people."

In addition of course there is the ever present risk of nuclear accident which here has to be seen in the context of special problems of CANDU reactor design and the department of Atomic Energy's past record of safety. Evacuation will also be difficult given the topographical conditions here. We also must keep in view the threat of exposure to bombing and war time action due to the location of a naval base nearby.

To be fair to the Kaiga project authorities, they have time and again allayed fears regarding the safety of the project. However, this has to be seen in the context of the project which has seen two accidents that have already occurred. On May 12, 1994, there was a partial collapse of a concrete dome of Unit 1 reactor and work was then shifted to Unit 2. All work was suspended in Unit 1 pending detailed investigation causing a delay of nearly 4 years. Two expert committees were set up to investigate the cause of failure and gave recommendations for reconstruction. Following the recommendations the dome was rebuilt, increasing its thickness from 340 mm to 470 mm.<sup>15</sup>

The second accident took place on November 11, 1999, when a fire broke out in the first dome of the Kaiga Atomic Power Project leading to a loss of nearly Rs. 3.5 million. The Times of India reported, "It is learnt that the welding

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work on top of the reactor dome No. 1 was going on when the sparks from the welding work made the highly inflammable paint tins stored inside the dome catch fire. More than 100 workers who were there when the fire broke out, felt suffocated but managed to escape safely. It is learnt that if the accident had happened in Unit 2, it would have led to a major accident.<sup>16</sup>

Outlook magazine reported recently (Nov. 8, 1999), "The Atomic Energy Regulatory Board (AERB) had directed the Department of Atomic Energy to carry out an integrated ECCS testing in Kaiga 1 and 2 as well as RAPS 3 and 4 before start up. It also wanted proof and leakage tests conducted on the reactor containments. And finally a full scope simulator to be installed for operator training. None of these directions have been complied so far."<sup>17</sup>

Dr. A. Gopalakrishnan was the chairman of the Atomic Energy Regulatory Board (AERB), between 1993 and 1996. He recently told Outlook magazine that urgent advice for blade replacement for the blades of turbines in Narora and Kaiga plant was ignored, that if this had been attended to, then the Narora fire of 1993 could have been avoided. He also said, "When as a chairman of AERB I appointed an independent expert committee to investigate the containment collapse at Kaiga, the Atomic Energy Commission (AEC) chairman wanted its withdrawal and matters left to the committee formed by the Nuclear Power Corporation MD. The Department of Atomic Energy also complained to a minister in the PMO who tried to force me to back off."<sup>18</sup>

The Kaiga project, which has already incurred a cost of around Rs. 29000 million (escalation of about Rs. 6000 million) has a potential of 2000 MW, according to Mr. V.K. Sharma, project director (quoted in the Economic times September 9, 1999). He said the Nuclear Power Corporation of India Ltd. is planning to set up four more units

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at the site, for which the Ministry of Environment and Forests has already given clearance. The proposed units - three and four are going to be 220 MW each. The remaining two units could be 500 MW each," Mr. Sharma said.<sup>19</sup>

## **IV- Displacement Shatters Life of People**

In recent years the district of Uttar Kannada has been forced to play host to a number of big projects which have displaced a large number of people. In addition to this direct displacement, there is also the threat of indirect, gradual displacement. This happens when the resource base of the villagers is gradually eroded to such an extent that it becomes difficult for them to sustain their livelihood at their ancestral place. Gradually they are forced to move out in search of livelihood.

First let us look at direct displacement that has been caused already or which is threatened in the near future. Stage I of Kali river project submerged the town of Supa and 47 villages- 26 fully and 21 partially- 13754 ha. in all. About 10,000 persons were displaced by this project. In the second and third stages of the dam project on this river (Kodsalli, and Kadra projects) nearly 3000 more people were displaced. Two supporting dams have been created on the tributaries of this river and 5 others are planned. Keeping in view also the displacement caused by related infrastructure, it can be said that the Kali project involves the displacement of around 18000 people.

Another series of dam projects was planned on Bedthi river. Stage I of this project alone would have displaced about 15000 to 20000 people. Stage II would have submerged about 60 villages and caused even more displacement. However the Bedthi project has now been changed under the pressure of people's movements in such

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a way that storage dams will not be constructed, only 'run of the river' schemes will be taken up to generate hydro power. A series of six such schemes are planned. Some environmentalists had also advocated this approach in the Himalayan region as an alternative to big displacement causing projects such as Tehri dam project. However in Uttar Kannada some local groups feel that this is not a good alternative as a series of several such small projects on Bedthi river can also cause a lot of problems to local people. This debate is still continuing.

In a submission made to the environment ministry the Bedthi-Aghanashini Kolla Sanrakshini Samiti, an organisation protesting against this project has said, "These projects are 'pondage schemes' involving certain submergence. The name 'run of the river' is given to fool the public. Small dams of 10 to 30 m height will be built. The Samiti says that 980 ha. of garden land and 1200 ha. of paddy land will be lost to submergence, apart from 4800 ha. of forest land. Construction of approach road and power lines will claim even more forest land." Threat will be posed to rehabilitation centres at Heggara and Kalleshwara so that people here may face double displacement within a short period.

One dam is also proposed on Aghanashini river near Hurlamane. The area of submergence for the full reservoir level of 516 meters has been estimated at 9120 ha. The agricultural land is classified into arecanut gardens (870 ha.) and paddy fields (966 ha.). More than 100 villages are likely to be submerged if and when this dam project is implemented.<sup>10</sup>

Thus on the whole it can be said that the original planning of dams in this district would have involved the displacement of nearly 75000 people or over 6% of the population.. However this has been scaled down due to the resistance of people. Still all the dams of this district and the related

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infrastructure is likely to result in the displacement of about 40,000 people as things stand today.

But it is well known from the past experience especially of dam projects that apart from the directly displaced people, a significant number of other people are also displaced indirectly. This can happen either because big chunks of the land having come under submergence economic viability is not possible on the basis of the remaining land, or there is the adverse impact of seepage, or the settlement is reduced to an island with the creation of the man-made lake. If we keep in mind the indirect displacement relating to dams, then the dam-related displacement is likely to go up to at least one and a half times the original estimate. Also to be covered under indirect displacement are those families in towns which depend on the linkages with farmers and gardeners in the submergence zone. If these villages are submerged, the economy of such trading centres too will collapse.<sup>14</sup>

The preparations for the rehabilitation of dam evictees have fallen far short of desirable norms.

Several years back a large number of dams displaced people were sent here from neighbouring Shimoga district and they have still not been rehabilitated in a satisfactory manner. Some of them have been exposed to displacement more than once. The experience of the evictees of Supa dam (Kali Stage I) is no less disturbing. A natural forest was cleared at a place called Ramnagar at Uttar Kannada - Belgaum border for the evictees of this project in 1975. However, due to lack of protection from soil erosion, this entire area has turned into "a desert unfit for cultivation for all times" (in the words of ecologist Madhav Gadgil) even before the evictees could shift here.

Pointing out how the resettlement work was badly bungled from the start, Gadgil has written, "The clearance of

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the forest on the land earmarked for resettlement was clearly a grave error. The original forest was rich in tree species of the genus Terminalia which could have served as a base for a flourishing tasar industry. This could have been supplemented by bee-keeping and production of forest produce such as harada (Terminalia Chebulo) nuts. The remaining less valuable trees could have been selectively cleared and cultivation of intervening patches of terraced and bunded land properly organised. This would have resulted in an economically more viable and ecologically sounder land use. Instead the summary deforestation without the institution of any soil conservation measures has irreversibly ruined the large tract of land." Thus instead of improving the livelihood prospects of the land area that had been selected for rehabilitation, the authorities callously demolished whatever possibilities that already existed and in the process, also gravely damaged the ecology of the area.

The experiences of the rehabilitation of Kali Stage II has also not been encouraging.

"In our old village we had very very fertile land which was irrigated by natural springs. No pumpset, no diesel was needed. The land was so fertile that we got very good yield from our mixed garden of arecanut, coconuts and cardamom. Here we cannot hope to get the same yield even if we spend a lot of money on irrigation. The quality of land is not good." .

This is how Narayan Yuri compares the livelihood prospects of his old village Barbelli with the new resettlement site at Heggur. He is one of the evictees of Kali Stage II Kadasalli dam project.

His wife Shakuntala is even more emphatic. "From all points of view, life in the old village was better. We had only one problem there. Due to the dam that had been planned several years back, the government did not build a badly needed bridge and so we had the problem of commutation.

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But from all other points of view, life in our old village was certainly better."

At the new site they had to work very hard for clearing the land and making it suitable for farming. The wells provided by the rehabilitation authorities did not work well and many families had to make their arrangements.

What resettled families like Narayanan and Shakuntala miss most are the dense natural forests from which they were able to meet most of their needs, which provided very good free manure for their garden and which stored so much rain water to provide cool, clean water throughout the year in the form of natural springs.

"Those villages were so beautiful," says Balachandra Hegde, recalling his visit to the now submerged villages, "Anyone who has lived there cannot forget them easily." It is largely due to the savings people had from the fertile lands of old villages that they have been able to give their new houses a semblance of some comfort. But even this may be short lived. As Balachandra explains, "A real possibility exists there that these people may have to face displacement a second time due to other projects on Bedthi river near which they have been resettled."

Seabird Naval Base has caused the displacement of over 4400 families (nearly 25000 people). In the process of displacement and rehabilitation the livelihood of thousands of fisherfolk and small peasants has been badly eroded. Some very good fishing sites and excellent breeding grounds of fish are being lost as a result of the implementation of the project.

In a memorandum given to the Government of Karnataka on July 9, 1999, the Seabird Naval Base Evacuees Forum, Karwar, and human rights organizations say that there is a lot of confusion with regard to payment of compensation for land and housing. This leaves free ground for middlemen

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and touts and exposes affected people to problems. The Hindu newspaper had quoted experts as saying that this belt has the best fish breeding centres in the whole of Asia. There will be heavy losses to fishing, beaches and tourism. Some tribals and artisan communities will also be harmed.

This memorandum alleges that from February 1999 to April 1999 policemen evacuated people from several villages in a very cruel way and they were dumped in cattleshed like conditions. In the summer heat these sheds turned into cauldrons, the memorandum said.

Even some months after eviction, in November the conditions at Harvaar resettlement site appeared to be quite bleak.

Several families gathered near tin shed dwellings complain of the poor quality of water as a result of which many of them have skin rashes and blisters on their body. The biggest worry however is lack of employment. As Kamla Tandel says, "Our biggest worry is where we will work, how will we earn, what we will eat. No prospects of employment are emerging at this place."

Kamla belongs to a community of traditional fisher folk who earlier had a fairly secure livelihood and close community ties. But as Anil Argekar explains, some people have resettled here and some at other places, so the old community ties have been broken precisely at a time when many people are sad and depressed and face a lot of uncertainty.

Taknoo Chandkar says he had four gumtas of land at their previous homes which moreover, was more fertile than the 2 gumtas he has received here.

The main source of earning there was fishing work which is so far absent here. Similarly, Durga's family which could make ends meet with 5 gumtas of land and fishing work is unable to survive now on just two gumtas of land. Some

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families also complain that they haven't got their full compensation dues yet.

From the outside this site gives the semblance of a planned rehabilitation site as some tiled houses and wells are constructed neatly. But talk to the people and you realise how uncertain and depressed they feel. The deterioration in their living and livelihood conditions is quite apparent and there appears little hope of immediate improvement. As we prepare to leave, a man says in understandable anger. "Someone comes with a camera, and someone with a notebook, but no one does anything to actually improve our condition."

These are examples of people who have been evacuated to make way for big projects and so got at least some compensation. But there are other people who are not evacuated but due to ecologically destructive activities near their houses and fields their living becomes so difficult that they sooner or later are forced to move out on their own. Such people do not get any compensation.

For example in the villages near the Bisgod manganese mining site, the mining company has been operating in such a way as to endanger the livelihood of many farmers. Their activities destroy the nearby forests. The waste material is thrown in the fields of several farmers. So much ground water is drawn at the mining place that the water table goes down and the villagers suffer from water scarcity. Several cattle perish at the mining site as no fencing is done. The use of dynamite for blasting causes cracks in several houses. The dust raised by mining reduces the fertility of fields. During rainy season water in pits overflows and floods fields and gardens.

Representatives of Vriksha Laksha Andolan say that massive damage to forests, soil erosion and landslides have been caused as a result of mining in the Bisgod region.

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Gopal, a local villager says, "Many of the problems can be avoided if proper rules are followed, but the tragedy is that almost all rules are ignored." Prabhakar, an activist of a committee which opposes destructive mining practices in the region says that at many places destructive mining is continuing illegally even after orders to stop them have been given by the courts.

The 1983 gazetteer mentions mining leases with 137 lessees in Uttar Kannada district. Court orders have since led to closure of work on some of them, but work on some others is still continuing.

Some people living near such mining sites face a lot of harm to their fields, gardens and water sources due to which their livelihood conditions can deteriorate badly. Uncertainty of a different kind is faced by those people who have heard that a big project is coming to their area due to which they may have to be evicted, or at least their present livelihood will be badly damaged. But they do not get any specific information from the government or any other source. So they keep hearing of the likely adverse effects from here and there, and become very uncertain and tense about their future.

This seems to be the situation of villages like Murangi and Hoskatta near Tadri coastal area. The talk of a big port being created in private sector has been in the news for sometime and the fisherfolk of these villages have been very apprehensive of its likely impact on them.

According to recent reports the government has invited a consortium of companies for a large scale expansion of Tadri port at a budget of around Rs. 20 billion. About 1300 acres of land may be leased for this purpose. The project is likely to be built on BOST (Build Operate Supervise and Transfer) basis.<sup>21</sup> However several fisherfolk fear that this can uproot them from their traditional livelihood.



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Nagesh Murangi and Prakash Murangi, feel that their work of shell fish collection as well as the fishing in the river will be adversely affected. Prakash Hoskatta feels that the existing life pattern will certainly change in a big way. Earlier they had heard of a scheme of barge based power generation which they had successfully opposed because they felt that the pollution caused by it will harm the fishing work badly. Now this is a new threat.

Durga Hospatta says that shell fish collection is a main source of livelihood here and this will certainly be harmed. Sadanand Kurley says their main problem is that proper information is just not provided to them. When something big that will affect us closely is planned, then the first step should be to inform us, to give us all the details and also to get our opinion, give us a chance to have our voice heard. But all this is never done. We have just heard something from here and something from there. So please tell the government to give us the full information, he says.

Indirect gradual displacement is also caused due to the many sided destruction and depletion of forests, their conversion into commercial species and the loss of grasslands.

Visiting various villages of the region one is struck by the extent to which forests supply the basic needs of people. Even a simple structure like a door has separate type of wood for the lower portion and a separate type for the upper portion. There are several types of baskets and farming implements in household use for which forests provide the raw material. All this, of course, is secondary to the main use of forests for water, fuel, fodder and (natural) fertiliser. Gardens of cardamom and arecanut prosper only because of the green leaf manure obtained from forests. Many types of vegetables, fruits and medicinal plants can be obtained from forests. It is to a large extent due to forests that people

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here can have a high quality of life. With the large scale destruction of forests this life pattern will receive a big and deadly blow. The large scale destruction of bamboo forests has had a very adverse impact on its availability for handicrafts. Disappearance of cane has affected the tribals adversely. The added destruction caused by mining rubble in many villages will render large areas infertile and unproductive.

Ironically, even some of the so-called efforts to promote and protect forests are so distorted that they increase the threat of displacement. In some cases in the name of joint forest management projects, poor peasants and pastoral people have been evicted from the land from which they were getting their livelihood. The creation of Anshi National Park can also lead to the displacement of people, (although there is some talk of converting this into a sanctuary). Even the curtailing of forest rights can lead to indirect displacement at a later date for several villagers.

Just as the destruction of forests is having a very adverse impact on the livelihood of a very large number of villagers, similarly the damage done to the rich resources of fisheries is having a baneful impact on the large number of fisherfolk who live in this district. Summarising the adverse impact on fisheries of several recent changes the district gazetteer has said, "The traditional fishermen were leading a contented life on their day's catch in the country craft. After introduction of mechanised boats, fishing operations are carried out so intensively that even egg mussels and fingerlings are not left behind. This has resulted in fish famine and the coastal people are denied use of the only source of proteins in their food. The dams constructed up the stream of Sharavati and Kali rivers have led to much destruction of downstream fresh water fauna. Every year 10 to 15 feet of silt gets deposited which drives away many animal species. Excess water released from these dams has also proved to be not congenial to many species living

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downstream. Insecticide used in and around the wells, ponds, tanks and streams have played havoc with the fauna pattern. The new industries and factories located on the banks of the Sharavati, Aghanashini and the Kali rivers have compelled the aquatic fauna to migrate if not eliminated them altogether."<sup>7</sup>

### ***Barge Mounted Power Plant***

Recently the proposal for a barge mounted power plant in Kumta taluka of this district became quite controversial and although it appears to have been given up for the time being due to people's opposition, some of the issues involved in the project are worth evaluating. Not the least because it may be revived later.

Under this project, perhaps the first of its kind in India, a power plant was to be mounted on a 85 m x 25 m barge which was to be moored to four piles on the Aghanashini river. Seven diesel generator sets were to be installed to generate 110 MW. At full capacity, this plant would have consumed 570 tonnes of fuel and required 11202 cu meters of water an hour.<sup>20</sup>

The issue on the basis of which this plant was opposed were pollution and adverse impact on the livelihood of local villagers, specially fisherfolk. The discharge of hot water was expected to affect the ecology of the area. This would have posed a threat to fish, clams, oysters etc. About 3000 people here are dependant on collecting shells. Vibrations due to the barge and discharge of hot water could affect the availability of shells in the river. Disposal of huge quantities of ash and transport of fish also posed ecological and safety problems. Oil leakage could have serious impact on the aquatic ecology.<sup>9</sup>

Thus without causing any direct displacement this plant could have eroded the livelihood of a large number of people gradually.

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The many sided threat of displacement in Uttar Kannada district is summarised in Table 3. Despite the efforts of people's movement to bring down the threat of displacement, nearly 75000 people face the threat of displacement (recent past or near future, categories I and II) while the number of direct and indirect displacement (categories I, II and III) may even go up to two or three times this estimate. This is a large threat in a district where the total population is only 1.3 million. People living a harmonious, environmental friendly life, in beautiful villages are thus being virtually pushed out to create the infrastructure for supporting high polluting, unsustainable urban life styles.

Ancient legends and stories are woven into the colourful past of this ancient land. According to one of these, this region was the creation of Parashurama who threw his axe from a point of the Western Ghats and asked the ocean to recede back to the extent of the distance covered by the axe. But it appears as though now the process has been reversed and more land is being claimed back from the people for submergence and other purposes. One can only hope that better sense will prevail and this entire process will be reconsidered before it is too late.

**Table 4 - Causes of Displacement in Uttar Kannadal-  
Sources of Displacement Caused Already**

1. Kali River Dams
2. Seabird Naval Base
3. Kaiga Nuclear Plant

**II- Potential Sources of Future Direct Displacement.**

1. Remaining Dams of Kali River.
  2. Hydel Project on Bedthi River.
  3. Dam on Aghanashini River.
  4. Anshi National Park.
  5. Tadri Port.
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### III- Sources of Present and Future Indirect Displacement.

1. Mining Hazards.
2. Forest Destruction.
3. Disruption of river/marine ecology causing disruption in livelihood of fisherfolk.
4. Reservoir Induced Seismicity and other adverse impacts of dams.
5. Routine or accidental release of radioactivity.
6. Plantations.

### V- A Debate on Development Paths

The traditional livelihood pattern of Uttar Kannada is based on agricultural, horticultural farming and fishing activities. This depends on mixed natural forests, natural springs of water, fertile land supported by organic manure and unpolluted free flowing rivers and coastline. In this system, protection of environment and livelihood of people are mutually supportive and people have a healthy life even at low level of cash income. Even though the cash income of people in Uttar Kannada district is much lower than the residents of Bangalore (urban district) the life expectancy in Uttar Kannada is higher. At the same time percentage of people living below the poverty line in Uttar Kannada is much lower than in Bangalore.<sup>3</sup>

There is a strong case for protecting and preserving this livelihood based in Uttar Kannada which is in complete harmony with the objective of protecting environment. This will also be in harmony with the global objective of reducing the threat of greenhouse impact/global warming, as well as a widely accepted objective of reducing pollution and protecting bio-diversity. However, special care should be taken to meet the needs of weaker sections and provide a secure base for them.

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To meet the aspirations of educated sections and provide a more diversified economy, some economic activities can be added such as computer software and electronics industry, medicines and special health foods based on minor forest produce, some agro processing and eco-tourism. It is possible to carry out all these activities in environment friendly ways while improving the employment and income of people.

### ***A Youth Speaks About His District's Future***

Narsingh Chaapkhand- a 24 year old writer and law student says. "Our district has a lot of resources but our future will be secure only if we learn to use these resources properly. Look at the way forests are being turned into plantations - can this be the right use? Or look at the way in which the evictees of Supa dam were cheated - how they were paid very low rates for their fertile lands and driven to barren lands.

We need to protect our natural forests as the basis of our survival and in addition we should take special care of areas like Joida where there is more poverty.

In particular work based on non-timber forest produce or minor forest produce can provide a lot of new and diversified employment. As Yellappa Reddy points out a single fruit uppage (*Garcinia gummigatta* - its extract is used for reducing obesity) is known to provide the basis of a Rs. 200 million industry. Reddy, a highly respected former forest officer has said that the entire employment problem of the district can be solved on the basis of well planned care of non-timber forest produce. However full care needs to be taken simultaneously to ensure a sustainable approach that does not deplete the basic resource. Already about 140 useful types of MFP is being collected in the forests of Uttara Kannada while over 300 types is known to exist, according to studies made by the Parisara Sarankshana Kendra.

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So the traditional livelihood pattern with some diversification and addition of a few industries that do not pollute, do not displace and do not degrade the natural resources while meeting the aspirations of the educated sections should be the foundation on which the economy of the district should be built, an economy that is in harmony with environment protection and social stability.

But in recent years government policies and corporate interests appear to be pursuing quite a different agenda for this district. This is based on using the resources of this district to create the infrastructure for the rapid growth of big urban industrial centres in Karnataka and elsewhere. The emphasis is on big ports, mining and above all on big power projects- hydel projects as well as nuclear projects. This district is being promoted on a power capital for the state, perhaps for an even bigger region. Already this district is being used to produce electricity which is perhaps more than 30 times its own consumption. On top of it there are plans for even more rapid expansion of power generation capacity in the district.

But this comes at a heavy cost to the people and environment - submergence of tens of thousands of hectares of forests, displacement of tens of thousands of people, grave hazards of radiation and seismicity. Why should a district accept all this social disruption, grave hazards and ecological risk when alternatives of healthy and prosperous life in conformity with social stability and environment protection are available to it?

Therefore several people of this district are fully justified in resisting this imposed model of development - imposed by a polluting, disrupting urban industrial commercial model whose sustainability, let alone desirability, is being increasingly questioned all over the world. Their resistance deserves help and sympathy, as also other efforts to build a diversified economy based on the traditional harmony

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between livelihood and environment protection. Retaining and strengthening this harmony should be at the heart of such efforts. The existing National Park pattern which seeks to protect environment by displacing people should be avoided. As long as the harmony of livelihood and environment protection is retained, people will certainly come forward to protect their natural resources for themselves and for future generations.

## **VI- SACRIFICE IS AVOIDABLE**

When objections are raised against some mega projects, specially large dam projects, regarding the large scale social and environmental destruction likely to be caused by them, the authorities come out with their final argument which they use as an argument to finish all other arguments. Whatever you are saying may have some truth in it and may be regrettable. but the fact that cannot be denied is that the country is facing big electricity and water shortages and to tackle these shortages this project is a must, they say.

In other words, the social and ecological disruption implicit in some mega projects is a necessary price to be paid for meeting the electricity and water shortages as these critical shortages simply cannot be met without these mega projects. An impressive array of statistics is drawn up to show the massive projections of electricity and water requirements a decade or two decades from now, then the present shortage is shown using another set of statistics and a scary picture is drawn up of how acute the shortages are. The mega projects are made to look as the only hope in a situation of increasing despair.

Presented in this way, there indeed appears to be a strong case of accepting, no doubt with regret, the controversial projects with all their adverse effects as a necessary sacrifice. But is this presentation really a fair and

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credible one? Or is it carefully manipulated to conceal more than it reveals so as to obtain the huge financial commitments and at the same time create a favourable public opinion in favour of these projects.

As social activists and researchers sympathetic to them look more carefully at the statistics and other information, they are also presenting their own projections of electricity requirements, projections which are much lesser compared to the official estimates even after taking into consideration all essential uses of electricity. If the requirements are not so big, then it should be possible to do without some of the ecologically and socially most disruptive projects? Or perhaps these projects can be redrawn to reduce their harmful effect. They are also suggesting different methods of meeting power needs, specially in the villages for agriculture, small scale industries and domestic use. They are also coming up with suggestion for quenching the thirst of water-starved areas which promise more immediate results than the projects of long gestation periods.

An important effort in this direction is the widely discussed work of Prof. Amulya Kumar N. Reddy. In particular his latest paper 'A development-focused end-use-oriented (DEFENDUS) electricity scenario for Karnataka' which has been written with three other colleagues. Karnataka is a state where some socially and ecologically destructive projects are planned. The DEFENDUS arguments can be used by social activists to build up a case that electricity requirements of Karnataka can be met even without some of these most controversial projects. This paper contrasts the DEFENDUS set of projections and statistics of electricity with those given in the official 'Long range plan for power projects in Karnataka 1987-2000' (LRPPP).

The paper by Prof. Reddy and his co-authors concludes, in particular even though the DEFENDUS scenario involved

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the illumination of all homes in Karnataka, emphasis on employment generating industry, energization of irrigation pump sets upto the ground water potential and the establishment of decentralized rural energy centres in villages. It comes out with the energy requirement in the year 2000 which is only about 56 per cent of the LRPPP demand. To meet this demand, the DEFENDUS supply scenario involves a mix of efficiency improvement and electricity substitution, decentralized generation technologies and conventional centralized generation technologies in an approximately 20:25:54 ratio. And, the environmentally unforgiving technologies are avoided. The overall bill for the DEFENDUS scenario has been estimated to be only about 40 per cent of the cost of conventional approach. The DEFENDUS scenario also involves much shorter gestation times because it does not depend only on centralized technologies that will deliver energy and power after about a decade (if all goes well!). Finally, the DEFENDUS scenario is far more environmentally benign.

## Appendix 1

### Appiko Movement To Save Forests

There are some parts in the world - although these are getting increasingly rarer - where the existence of forests near villages remains the major factor in providing people a high quality of life. Several such clusters of villages can still be seen in Uttara Kannada district of Karnataka. It is true that in recent decades the forests of this district have come under a tremendous strain due to a number of factors (including commercial exploitation for industrial-urban use and indiscriminate mining) but the destructive impact of deforestation seen elsewhere has also motivated people to get organised for the protection of remaining forests.

Thanks to this people's movement for saving forests which started in 1983, today we can visit several forests

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which would have vanished but for the timely action to save trees. It is a blessing to be able to stand in the middle of this greenery and to think that all this was protected by the people. This movement for the protection of forests here is called Appiko (hug the trees). The name reminds one of the Chipko movement of Uttar Pradesh Himalayan region (Chipko has the same meaning) which to some extent served as the source of inspiration for Appiko.

Just a walk in a village like Gubbigadde (people from where had been enthusiastic participants in the Appiko movement) can give a fair idea of the importance of forests in the life of people. I took only a 15 minute walk and found that there are so many types of vegetable and medicinal plants just growing wild whose uses are very well recognised by the people and they describe in detail their virtues. I was initially full of questions but soon information on the use of various plants came in such torrents that I soon grew tired of taking notes. When I entered a house, I was informed how different types of wood had been used for the upper, middle and lower portions of the door. When I expressed admiration of a small basket, my village friends hastened to show me the many different types of baskets, all made from the material obtained from the nearby forests, which were available with a single household.

Then there were the numerous types of implements, for domestic use as well as for agricultural fields - ranging from the humble broom to the sturdy plough. Above all the forest provides the even more basic daily needs of fuel, fodder and water. The forest's gift of leaf manure has a special significance. This district is famous for its mixed gardens of arecanut, banana, black pepper, coconuts and cardamom which have been able to flourish largely because of the green manure and overall conducive environment provided by natural forests.

Due to these manifold contributions of forests it is not difficult to understand the pain which the people of

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Gubbigadde (sparrow field) and other villages felt when the forest near their villages were auctioned to meet the needs of plywood industry or for other industrial- urban requirements. These villages also have a tradition of opposing anti-people forestry practices going back to the days of British rule. The people were anxious for some action to protect trees and they listened with rapt attention when a dedicated son of this region who had travelled to the remote Himalayan forests told them inspiring real life stories of how the people of several Himalayas villages, specially women, hugged the trees to prevent them from being axed. This youth, Pandurang Hegde by name, had obtained a gold medal in postgraduate social work course from Delhi but his academic achievements were for him only a starting point for involvement in people's environmental struggles first in the Himalayan region and then in his home-district of Uttar Kannada (and neighbouring areas).

Around the same time Sunderlal Bahuguna, the venerable leader of Chipko movement from Himalaya region, also visited Karnataka. As the people here were full of questions about deforestation and how to check this, a local youth club invited him for a public meeting in Gubbigadde village. The presence of this veteran of several difficult struggles and the inspiring stories he told about the non-violent struggles to save forests inspired the people further to initiate action for protection of forests near their own villages. People of Salkani village had already written protest letters to forest officials. Now the people were waiting for some direct action.

This opportunity came soon enough in September 1983 when the Forest Department started felling trees in the Kalase Forest. Even though this forest was located far away from village settlements, as soon as the news reached Salkani and Gubbigadde villages, efforts were started to mobilize people for reaching the tree-felling site.

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On the morning of 8th September about 160 people started their march towards Gubbigadde forest. Braving rain and ignoring leaches that clung to their feet, crossing a river on a hanging rope bridge, the people rushed toward Kalase with the determination to prevent any further axing of trees. When they reached the forest, some of them rushed towards a tree which was being felled and embraced it. The axemen were stupefied. How could they axe a tree which had been embraced by human beings?

Surprisingly the forest workers were not all that opposed to the basic concerns of the people and agreed to stop work till senior officials came. On 22nd September the District Forest Officer came here with scientists and influential people. At first he said that the tree felling was scientific and should continue, but this reasoning broke down at the felling site when a scientist accompanying the official himself said that the allegations of excessive damage were correct. He said that the people should be complimented for having brought this to the notice of the authorities.

Husri village was the next major site of confrontation. In 1969 a natural forest of 900 acres had been clear felled here to raise a eucalyptus plantation. This had played havoc with the forest-dependent life of villagers, but fortunately one part of forest was still left for them. In 1983 the Forest Department sent axemen to fell nine trees here. The people decided to resist this. About 200 of them marched to the forest and embraced the trees. A tense situation was prevented from worsening when the official present was persuaded to take the viewpoint of villagers to senior officials and the Minister for Forests.

By December 1983 the Appiko movement had spread to eight different parts of Uttar Kannada district. Finally in the last week of December the much awaited visit of the Forest Minister to Kalase and other affected areas came. People turned out in large numbers to present their view point to

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him. The Minister gave specific orders to stop the felling of several marked trees and said that in future only dead and dry trees will be cut from here.

In April 1984 some Appiko activists decided to go on a long foot march to take their message to a wider area. This march started from Sirsi town on 10th of April 1984 and after covering about 650 kms. the marchers returned to Sirsi on 29th April 1984. Such foot-marches enabled the movement's message to spread to a wider area and also helped the activists to get a firmer grasp of the realities.

Within three years the movement had also spread to the districts of Shimoga and South Kanara districts. In some villages resources were mobilized initially by daily collection of handfuls of grains. The traditional theatre of Karnataka 'Yakshagana' was adopted to spread the movement's message.

But the 'appiko' movement was not concerned only with confrontations. Following the ban on green fellings after 1987 the movement gave more attention to the regeneration of degraded land. There are several successful examples where greenery is returning fast.

## Appendix 2

**Table 5 - Statistical Profile of Uttar Kannada District.**

<b>Area (sq. Km.)</b>	<b>10291</b>
<b>Population (1991 census data) (in million)</b>	<b>1.22</b>
<b>Population (1999 Projection)</b>	<b>1.31</b>
<b>Life Expectancy at birth (1991) in years.</b>	<b>66.96</b>

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Adult Literacy Rate (1991) %	62.41
GDP per Capita (in Rs.)	5480
Population below poverty line 1993-94 in thousands	282
Population below poverty line 1993-94 in %	24.97
Children under five mortality rate	69

Source - Human Development in Karnataka, 1999

### Appendix 3

#### Threat to Wild Life

Uttar Kannada's many notable taxa include the Tiger (*Panthera tigris*), Gaur (*Bos gaurus*), Elephant (*Elephas maximus*), Lion tailed Macaque (*Maccaca silenus*), Travancore Tortoise (*Indotestudo forestini*), Laughing Thrush (*Garrulax delesderti*), species of legless amphibians (Caecilians) and dipterocarp trees.<sup>1</sup>

On the many sided threats to wild life the district gazetteer records that the wild life of the district and its neighbouring region has suffered relentlessly due to a number of factors.

"Indiscriminate poaching of animals for their tusks, skins, furs, bristles, teeth, claws, horns and meat has proved to be disastrous for the existence of these animals. The shrimps are sieved from the sea to get foreign exchange. Frogs are killed for the export of their legs, snakes are caught in hundreds just because westerners have a fancy for the coats, handbags and purses made from their skins. The crocodile has almost become extinct for the same reason.

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The deers and boars are hunted to suit the palate of the wealthy. The tuskers are almost certain that they carry execution orders on their heads. The tigers and panthers are killed for their beautiful skins.”

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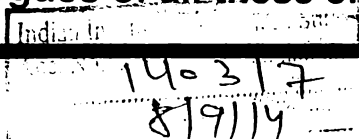
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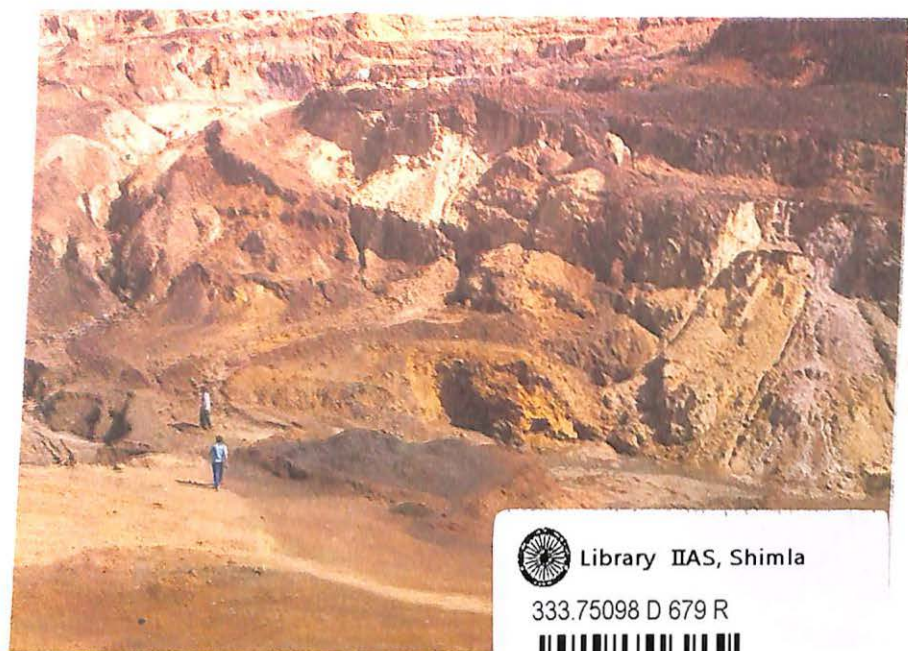
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