

An Experiment in Eco-development in Uttara Kannada District of Karnataka

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ABSTRACT: This paper recounts our experiences of an eco-development oriented action research programme in the Uttara Kannada district of Karnataka state. This experiment aims at bringing together the local population, scientific and technical experts and government officials in an attempt to halt the pace of environmental degradation and augment the vegetational resources of the region. Our activities have included revegetation of individually assigned as well as communal forest lands, establishment of nurseries in schools and colleges, development of fodder resources, propagation of fuel efficient wood stoves and training programmes.

INTRODUCTION

It has been our privilege to work with the people of the enchanting forest-clad hill district of Uttara Kannada in an attempt at rehabilitating their fast degrading environment over the last three years. In a heterogeneous society like ours this has meant interacting with many segments of the society, often acting at cross-purposes. The experience, while occasionally frustrating has been a rewarding one, and we are hopeful of continuing progress on many fronts. Since both eco-development and participatory research have been attracting more and more attention, we set down here our experiences of the dynamics of the social forces encountered by us, for exchange of ideas, comments and criticism from others.

THE SETTING

The district of Uttara Kannada (also known as North Canara) is situated on the west coast

of peninsular Indian (see Fig. 1) just to the south of Goa (lat. 13°55' to 15°31' N; long. 74° 9' to 75° 10' E). Geologically it is a transitional zone between the younger basaltic rocks of Deccan trap formation and the older crystalline rocks of the Archean shield of Indian peninsula. The hills of Western Ghats are very low and broad in this transitional zone, and much of the district of Uttara Kannada is composed of gently undulating hills running all the way to the sea to the west and merging with the Deccan plateau to the east. The district receives an annual rainfall of 1500 to 5000 mm, and the natural vegetation ranges from ever green through dry deciduous type (Mani, '74). The district has the highest proportion of area under forest, and one of the lowest population densities of south India, primarily because of the high incidence of malaria in the hill tracts till late 1940's. The coastal tracts have been historically much free of malaria, and have been more densely populated (Vishwanathan, '50).

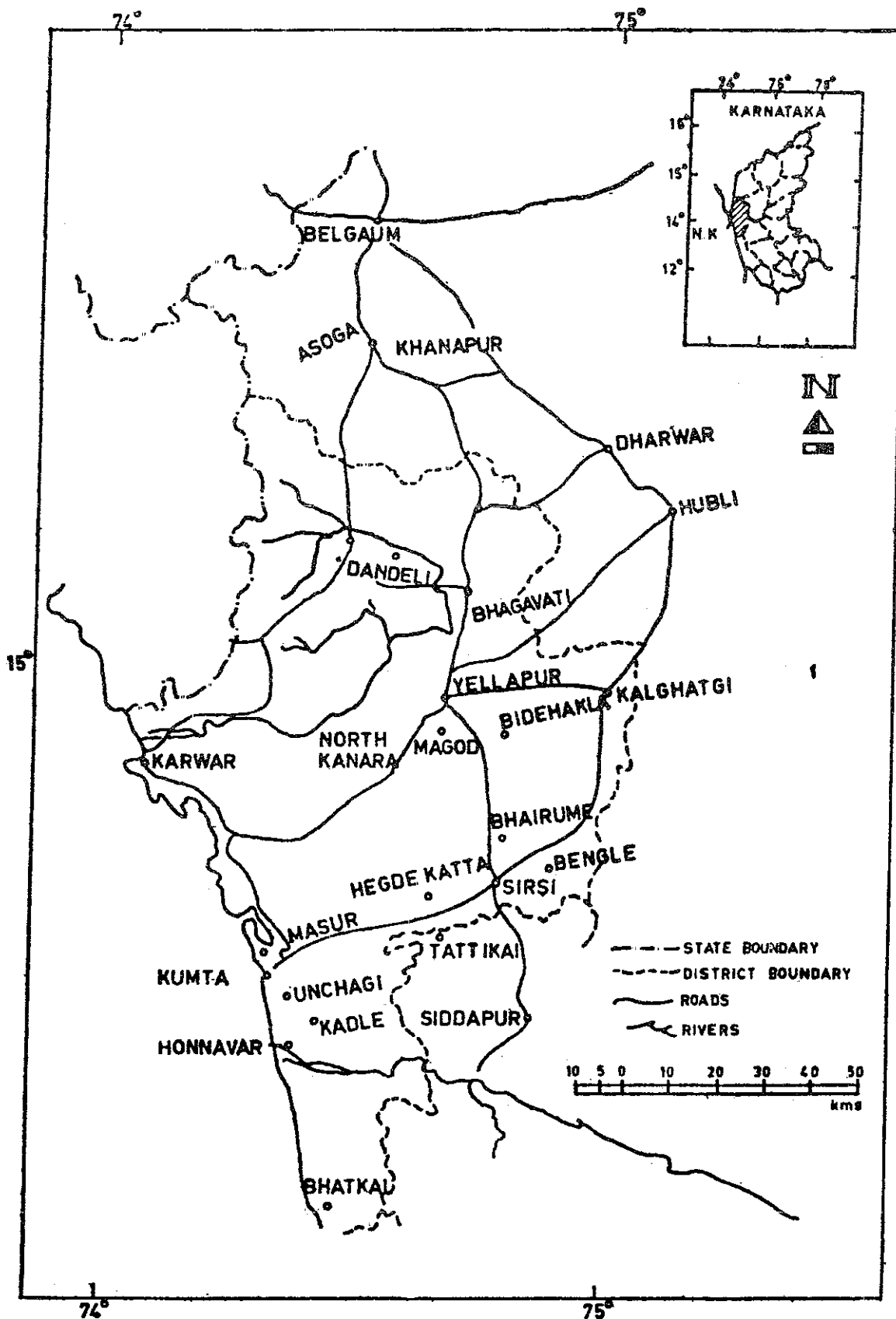


Fig. 1 — Map showing the five taluks of Uttara Kannada district and some of the localities mentioned in the text relevant to the eco-development programme

Paddy is the major cereal crop of the whole district. It is supplemented by coconut on the coast and arecanut, pepper and cardamom on the Ghats. The traditional agriculture and horticulture of the district heavily relies on the use of leaf manure and mulch collected from the tree-clad hilly areas adjacent to the cultivated valleys. The villagers maintain large numbers of cattle dependent on free range grazing on these hilly tracts, primarily for the supply of dung used as manure in the fields. The coasts offer good fishing; with fish being traditionally used as a fertilizer in the coconut gardens. The agricultural holdings are small on the more densely populated coastal tracts; they are larger on the Ghats. The bigger land owners on the Ghats with cash crops of arecanut, cardamom and pepper constitute a rather well off segment of the Indian society. The peasants from the coastal tract, dependent on small holdings of paddy yielding but a single crop a year, work regularly as labourers on these farms on the Ghats. The traditional society is dominated by a groups of priestly caste known as Havyak Brahmins who are adept at the management of the multistoreyed spice gardens with arecanut, pepper, cardamom and banana as the major crops. The peasant castes such as Naiks on the Ghats and Patagars and Halakki Vekkals on the coast are primarily paddy growers. Notable amongst artisan castes are Medars or basketweavers. The deciduous forest tracts harbour a group of buffalokeepers known as Gavil Dhangars who have migrated from the Western Ghats of Maharashtra in large numbers after the eradication of malaria by 1950 (Buchanan, 1803; Campbell, 1883; Gadgil and Malhotra, '82).

Forest Resources

The rich forests of the tract were a major support system for the traditional agriculture in the pre-British times and also supported artisans like basket weavers and wood carvers. The wild pepper of the tract was a major item of export in medieval times with British and Dutch factories at Karwar specializing in pepper. But there was little demand for timber as such till the British rule, and the limited demands of the rural population for timber were well regulated through traditional practices of the village communities. On

their conquest, the British therefore found Uttara Kannada to be a rich reservoir of forest resources for their resource-hungry economy. Their primary interest in the early days lay in teak for ship building and other construction (Cleghorn, 1861). The British reserved large tracts of forests for Government use and began to convert them into teak plantations. This was protested against by the local populations traditionally dependent on leaves and many other produce from these forest for their subsistence. As a compromise, the British Government left about half the district area under forest (40%) for the use of village communities as minor or *soppinabetta* or *hadi* forests, reserved the other half (40%) for Governmental reserved forests; the remaining 20% being land under habitation and cultivation. The reserved forests primarily catered to the urban-industrial sector, and continued to be a focus of conflict between the rural population and the Government (Dhadeshwar, '41). The village forests were poorly managed by the villagers in British times, as their whole system was breaking down under the foreign rule.

The Indian Government continued the British policy of giving priority to urban-industrial interests from the forestry sector after independence. A major plywood and paper industry was established at Dandeli in Uttara Kannada district with the forest resources being granted at nominal rates, far below the market price. The industries were owned by outsiders who also had little stake in the long-term preservation of resources made available at throwaway prices. There was consequently a rapid depletion of the resource base of these industries and a resentment in the local population against them (Prasad and Gadgil, '78; Gadgil, Prasad and Ali, '83).

The depletion of the forest resources, especially bamboo used for paper industry reached serious magnitudes in late 1960's and early 1970's. At this time Medars, the basket weavers of Karnataka mounted a protest against the depletion of bamboos—their subsistence base. As a result the Government of Karnataka asked the Indian Institute of Science to look into the problem, resulting in two of us (SNP and MG) taking up ecological studies on bamboo and their utilization in 1976. Since the large livestock populations of Gavli Dhangars also affected levels of bamboo stock, we began to investigate the implications of forest grazing as well (Shastri,

Gadgil and Malhotra, '77; Gadgil and Malhotra, '82).

River Valley Projects

With annual precipitation of 4000 to 5000 mm. on the crestline of the Ghats and the drop in elevation to the west coast, the hilly terrain of Uttara Kannada and neighbouring districts affords excellent opportunities for the utilization of hydroelectric power. A number of such projects have therefore been taken up over the last forty years beginning with the Sharavathy scheme on the boundary of Uttara Kannada with Shimoga district. Given the dominance of the urban-industrial sector at the national policy making level, it is natural that little attention has been paid to the loss of fertile valleys with arecanut orchards under these projects. The compensation for the land submerged has been inadequate, and those affected by submersion have contributed to further destruction of the forest, often in the catchment areas of the dams. This lack of consideration for preservation of vegetation in the catchments has resulted in rapid siltation of reservoirs, floods and other problems (Gadgil, '79).

These problems passed unnoticed in early years of independence. However, as we approached 1980's, they began to draw attention and an assessment of the environmental impact of dams was made mandatory. It was at this time that a project was mooted to be taken up on the Bedthi river in Uttara Kannada district. One of us (MG) was a member of a Government of India committee for assessing the environmental impact of this hydroelectric project. The committee cleared this project just with the day's deliberations without any careful thought. This appeared most unsatisfactory to MG, who felt that the detailed project report for the Bedthi dam was incorrect in many details.

The land to be submerged under the Bedthi hydroelectric project was either prime forest land, or arecanut orchard land owned by Havyak Brahmin farmers. Coming from a literate caste many members of this community are educated; in fact the Managing Director of Karnataka Power Corporation executing the Bedthi project belonged to this community from Uttara Kannada district. Others were in high political positions. This community was therefore in a position to challenge the

assumption of the Karnataka Power Corporation that the project was justifiable on economic, social and environmental grounds. The challenge was spearheaded by the powerful co-operative sales society of arecanut orchard owners (henceforth called *totagars*; *tota*: orchard in Kannada) at Sirsi with backing from the Principal of the College at Sirsi. Since MG was convinced that the Government of India committee had given a clearance without due investigations, he, along with SNP agreed to work on a scientific reassessment of this project. KMH, a practicing farmer joined from the side of the Co-operative Sales Society at Sirsi. There was participation in this study by several others, including an anthropologist, an economist and an electrical engineer. The study demonstrated that the project was not justifiable on economic grounds, the benefit: cost ratio being around 1:2. The project has since been suspended by the Government (Sharma and Sharma, '81; Gadgil and Malhotra, '83).

Environment and Rural Population

Thus, it was two conflicts over the use of natural resources; basketweavers and buffalo-keepers versus paper mill for bamboo and agriculture-horticulture and forestry versus power generation for the Bedthi river valley that led to the involvement of the Indian Institute of Science in the Uttara Kannada district. Such conflicts have been variously interpreted as a justified sacrifice of parochial local interests in wider national perspective or as an outrage on the weaker rural interests perpetrated by the dominant urban-industrial sector (Lipton, '77; Agarwal, Chopra and Sharma, '82). Sundarlal Bahuguna, a leading figure on the Indian Environmental scene inclines to the latter view and being present at the public meeting to discuss the Bedthi project, he too became involved in the Uttara Kannada district. Also present at this meeting was Dr. K. Shivaram Karanth, a noted Kannada intellectual and writer. His perception of the problems was different and in his valedictory address to the meeting he brought out the role played by the local population, in particular the arecanut orchard owners of Havyak Brahmin community, in the degradation of the natural resources of the Uttara Kannada district.

For there is no doubt that the pressure of local population has resulted in overexploitation and degradation of large tracts of the district. It is quite likely that this has taken place primarily after the British takeover and reservation of the forests through a breakdown of older traditions of prudent management of these resources (Gadgil, Prasad and Ali, '83). Be that as it may, today the extensive forest areas assigned for the use of local communities are by and large far more degraded than the areas maintained as reserve forests. Amongst these the worst affected are the so-called minor forest areas which are open to use by the whole village community. The so-called *soppinabetta* or *hadi* forest areas, owned by the State but assigned to the use of individual *totagars* are much less degraded than these minor forest lands. But even these are often in a worse condition than the reserve forests. Their degradation has apparently accelerated in recent years with an improvement in the financial position of the *totagars* consequent on much better prices for the produce of their orchards. This has resulted in most of them giving up the collection of plant material from the *soppinabetta* lands through family labour and assigning it to hired labourers. These hired labourers wish to maximize their earnings and lop the vegetation to its utmost, not even leaving a single apical shoot once they climb up a tree and polishing off all saplings as they come up. In consequence, the vegetation of many of these *soppinabetta* and *hadi* lands has also been severely affected, though nowhere to the extent of minor forest lands. The degradation is greater in the coastal Kumta and Honavar taluks where the *hadi* lands are assigned to *totagars* in the ratio of 4:1 as opposed to 8:1 or 9:1 in the upghat taluks. In these upghat taluks the degradation is related to population pressure, being least in Yellapur, intermediate in Sirsi and maximum in Siddapur taluk. The degradation of minor forest lands also follows a similar sequence being minimal in Yellapur, and steadily worsening in Sirsi, Siddapur, Honavar and Kumta taluks in that order.

ECO-DEVELOPMENT PROJECT

Two of us, MSH and KMH, belong to the Havyak Brahmin community of *totagars* of Uttara Kannada district. MSH, now a

chemist at the Indian Institute of Science, comes from Kumta taluk where he has himself collected leaf manure while a school student. Over the years he has seen the decimation of vegetation on the minor forest lands surrounding his native village Unchagi. This has now reached the stage where people dig roots for fuel. KMH, a practicing farmer and horticulturist of Sirsi taluk had similarly witnessed a gradual deterioration of vegetational resources, though to a lesser extent in his village. He comes from a family with interest in technical innovation. In fact, his family has the record of introducing the first biogas plant, cultivation of *Glyricidia* as a hedge plant for green manure and cocoa in the Sirsi taluk. The Hulgol Group Villages Co-operative Service Society which serves his area has led in innovative agricultural practices, and published a manual on recommended agricultural practices for the composite cultivation of arecanut, pepper, cardamom, banana and cocoa (Hulgol Society, '75). With this technical bent, both of us, MSH and KMH felt inclined to pursue systematic, scientific attempts to halt the pace of degradation and initiate attempts at restoration of the natural resources of our district of Uttara Kannada.

The Indian Institute of Science naturally came to play a role in these attempts because MSH was already on its faculty and KMH had come in contact with MG and SNP in connection with the assessment of the Bedthi hydroelectric project. The times too were propitious because by the beginning of 1980's there was a widespread concern in the country at the accelerating degradation of our environmental resources. This had led to the establishment of Departments of Environment at both the Centre and in the State of Karnataka. These departments were willing to support field-oriented projects in eco-development. At the same time, the forest departments had become aware of the mounting pressure of the people on forest resources and the difficulty of achieving results if the anti-people policies of British days were continued at these critical times. Moves towards involving people in efforts, classified under the rubric of social forestry, were therefore coming to the fore. We therefore felt that the best approach at this juncture was to frame an eco-development programme involving local people, scientific and technical agencies and Government departments in a joint effort.

Hulgol Society Project

Several years earlier we had attempted to involve ourselves in an effort to modernize the animal husbandry practices of the Gavli Dhangars of Uttara Kannada district (Shastri, Gadgil and Malhotra, '77). This had failed to make a headway, because switchover to stall feeding from free range grazing is a difficult proposition and because the Gavli Dhangars are a totally illiterate group. We nevertheless thought of attempting to involve them again and at a meeting called leaders of Gavli Dhangars, as well as totagars of Uttara Kannada, along with State Government officials of environment, forest, agricultural and animal husbandry departments and several scientific and technical people at a meeting in Bangalore.

It was decided at this meeting that the Gavli Dhangar development programme would be formulated with the help of a voluntary rural development agency, Bharatiya Agro-Industries Foundation (BAIF). BAIF has subsequently prepared a document, but in the absence of literate, influential leadership, amongst Gavli Dhangars, and their isolation from the settled population, the programme is still languishing. On the other hand, such leadership was readily available with the totagars and the programme immediately took off the ground. The first step taken was a discussion with a selected group of totagars at the field site in the area of Hulgol Society involving technical people as well as government officials under the guidance of Dr. Shivaram Karanth. This led to the formulation of a concrete project which was funded by the Karnataka State Department of Environment and Ecology in March 1982.

This project is operated through the Hulgol Society and supervised by a group including members of Hulgol Society, technical people from the Indian Institute of Science, Malnad Engineering College and BAIF and district officials of forest, agriculture, animal husbandry and rural development departments. Its scope initially limited to Hulgol Society area in Sirsi taluk and neighbouring upghat taluks of Yellapur and Siddapur has been subsequently extended to coastal taluks of Kumta and Honavar. The programme also draws support from a major grant from the Department of Environment, Government of India, to the Indian Institute of Science. It has the advantage of liaison with and advice

a State level committee headed by Special Secretary, Department of Environment, with Chief Conservator of Forests and several other high government officials and technical experts as members.

Soppinabetta and Hadi Lands

The eco-development programme has seven major components, namely, planting of *soppinabetta* and *hadi* lands, planting of minor forest lands, fodder development, school and college nurseries, jaggery stove, domestic chulas and training programmes. The planting of *soppinabetta* or *hadi* lands that are assigned individually to totagars is a relatively easy matter, since the ownership over produce and responsibility of protection is clearly assigned to one household. Starting with 15 farmers in 1982, we involved 120 in 1983 and 1984. Used as they are to natural growth on their *soppinabetta* and *hadi* lands, totagars so careful in tending their orchards are surprisingly little concerned with tending this growth. This planting also conflicts with their routine cultural operations on paddy fields and orchards which often leads to excessively late planting resulting in mortality of seedlings.

Protection of newly planted *soppinabetta* and *hadi* lands against grazing by free ranging livestock is a serious problem. A large number of livestock including some belonging to landless families are used to grazing on these lands. Their closure after fresh planting has led to protests by the owners of such animals, including cases of deliberate breach of fences and even police complaints. The problem is at its acutest in the coastal areas.

The primary requirements of the totagars from their *soppinabetta* and *hadi* lands are leaf material, fuel and fodder. They have traditionally met these requirements from indigenous species of the climax vegetation characterizing the locality such as *matti* (*Terminalia chebula*) and *kasarka* (*Strychnos nuxvomica*). Their first thought is replanting with these species. These species tend to be slow-growing and hence of little concern to commercial forestry. The forest departments are therefore not geared to supply them. This leads to a mismatch between species available at Forest Department nurseries and those requested by the farmers. Furthermore, experience has shown that these climax species

do not do well under the present degraded conditions of soppinabetta and hadi lands. There is therefore a need for careful experimentation with a variety of native and exotic species, an exercise in which we are now engaged.

The soppinabetta and hadi lands privilege is accorded only to the totagars. Since most of these are high caste Havyak Brahmins, the local peasant and labourer communities such as Naiks, Patagars, Halakkis naturally resent this privilege. In fact, of our 120 soppinabetta/hadi planters all but 2 are Havyaka Brahmins. A project focussing on soppinabetta/hadi lands therefore becomes suspect as exclusively subserving the interests of a wealthy high caste community. We quickly became aware of this implication which was ideologically unacceptable to us and even likely to jeopardise the whole programme through political pressure.

Minor Forest Lands

In 1983, we therefore decided to initiate eco-development efforts involving the weaker sections of the society. These communities meet all their needs for plant resources either from minor forest lands open to everybody, or from reserve forest lands through illegal means. Our target had to be minor forest lands which are extensive throughout the district. Any development of these lands must obviously be based on a co-operative effort by all concerned. This was apparently widely practiced in pre-British days. Even today, there are a few villages where such tradition persists, e.g., Halakar in Kumta taluk. These are however exceptions and we have tried to recreate the tradition of co-operation in any village where now minor forest restoration has to be taken up. This needs agreement on protecting such areas from grazing and lopping in early stages and on sharing of produce in later stages. Since all minor forest land is government land, the governmental agencies must also be party to the agreement. All of this poses problems and we could succeed in minor land planting in only 3 villages—Masur in Kumta taluk and Agasala-Bommanalli in Sirsi taluk in 1983 and again Masur and Yadahalli in Sirsi taluk in 1984. The Masur case is interesting, for this is a village almost entirely inhabited by two backward communities, Patagars and

Halakkis. These communities still have strong caste panchayats and authority of headmen. They had in fact attempted on their own to regulate lopping on village minor forest lands some years ago, but had failed. However, in 1983 they agreed, partly thanks to the prestige of the local high school headmaster Shri H. H. Patagar, the old Brahmin landlord, now a medical practitioner, Dr. Masurkar, and old contacts of KMH with patagars of Masur who work as labourers on his orchard. The planting was taken up through the high school in 1983 on one hectare; it did remarkably well and was extended to 2 hectares in 1984.

Fodder Development

As mentioned above, free range grazing by large number of livestock to which goats are recently being added as a new development in this district is a major constraint in any revegetation effort. The only long term solution to this can be reduction in number of livestock, and switching over to stall feeding. Our earlier studies have shown that when compelled by circumstances people do take these steps, as with Gavli Dhangars on the plateau of Sadawaghapur in Satara district of Maharashtra (Gadgil and Malhotra, '82). The key problems is to persuade them to do so before they are compelled by near total degradation of vegetation. Three approaches to this are possible: improve availability and quality of fodder, improve the milk yielding potential of animals by cross breeding and impose legal restrictions on free range grazing. We have ourselves concentrated on the first component and collaborated with BAIF on second.

Fodder of better quality and in greater quantity can be produced on minor forest or soppinabetta/hadi lands as intercrop or cover crop in orchards and as a second crop in *rabi* season on land otherwise left fallow. The fodder could be leaves of trees such as *subabul* leguminous creepers or grasses. Any such development calls for regulation of grazing. It is obviously most difficult on minor forest lands and easiest on orchard and farmland. While we have attempted to cover all these aspects, the greatest success has been growing fodder as *rabi* crop of sunhemp on land retaining sufficient moisture after the monsoon paddy crop.

Plant Nurseries

With the planting programme — be it sopinabetta, minor forest or fodder sunhemp, a major constraint has been ready supply of seedlings, grass sets or other planting material. The programme of school, college or kisan nurseries, first developed in Gujarat state obviously offers the best solution. In outline it is based on a supply of requisite materials such as seeds and polythene bags by forest department, raising of seedlings by local effort, their repurchase by the forest department at costs routinely incurred by them and then supply free of charge to the local population. Properly executed raising nurseries could provide a small but useful income to rural schools, youth clubs or landless labourers. The difficulties include cutting through initial red tape and making sure of proper payment, and willingness on part of the local agency involved to invest some effort and perhaps some capital. Our aim was to raise 25 to 50 thousand seedlings each in 10 schools in 1983-84 season. We succeeded in raising 10 to 50 thousand seedlings in 7 schools. The value of locally raised seedlings has however been great in enhancing the enthusiasm of local people for taking up planting. The payments received from the forest department after the first experiment have also reassured people.

Fuel Conservation

While these revegetation efforts attempt to augment the supply of plant material for the people, it is equally relevant to reduce the demands by enhancing efficiency of its use. Fuel consumption of the rural population of Uttara Kannada is almost twice the national average, undoubtedly because of its abundant availability till the last generation. Efficient use of fuel can however now make a major contribution. Our attempts in this direction began at the instance of MSH who persuaded a group of chemical engineers headed by Prof. R. Kumar of the Indian Institute of Science to look carefully at local wood burning stoves used for a variety of purposes ranging from cooking food, heating bath water, making jaggery, parboiling rice and so on. Careful technical work, begun in 1979 revealed the possibilities of easily doubling fuel use efficiency by careful design while retaining the

use of local materials such as mud or laterite stone for construction and retaining the possibility of construction as traditionally carried out by the local rural workers.

Jaggery Chulas

The first device designed was a *chula* for making jaggery. Traditional chulas for this purpose consume large quantities of good sized wood logs. Only a part of the bagasse can, however, suffice as fuel for the new design. Such a chula was constructed at MSH's native village Unchagi in 1980 with the assistance of the Karnataka State Council for Science and Technology and performed well in the jaggery making season of 1980-81 requiring no fuel wood. Its spread was however hampered by (1) the feeling that jaggery manufactured by using bagasse as a fuel was inferior, (2) the additional attention required to feed bagasse as fuel, (3) the cost of this chula of Rs. 2000, much higher than that of a traditional open chula, (4) the fact that jaggery making pans and crushers are controlled by landowners, while sugarcane is grown and jaggery made by tenants who have to give 1/3rd of the jaggery to the landlord. The landlords owning crushers and pans thus have no stake in saving fuelwood for which only tenants have to pay.

These factors conspired against diffusion of this chula beyond Unchagi, although it performed well enough in 1981, 1982 and 1983. Our renewed efforts and funding from the District Rural Development has led to the construction of 7 more jaggery making chulas in 1984 in Kumta and Honavar taluks.

Domestic Chula

The design of jaggery chula was followed by designing of a fuel efficient chula for domestic cooking by the same group of chemical engineers (see Fig. 2). Their primary interest lay in scientific work and considerable research went into designing the chula between 1981 and 1983. At this time, MSH made a concerted effort at translating the design into an actual procedure of fabrication of the stove in the field. He constructed first such chula, again at Unchagi in his father's house in early 1983. Its field performance was good; with realized efficiencies of the order of 30 per cent as opposed to 42 per cent

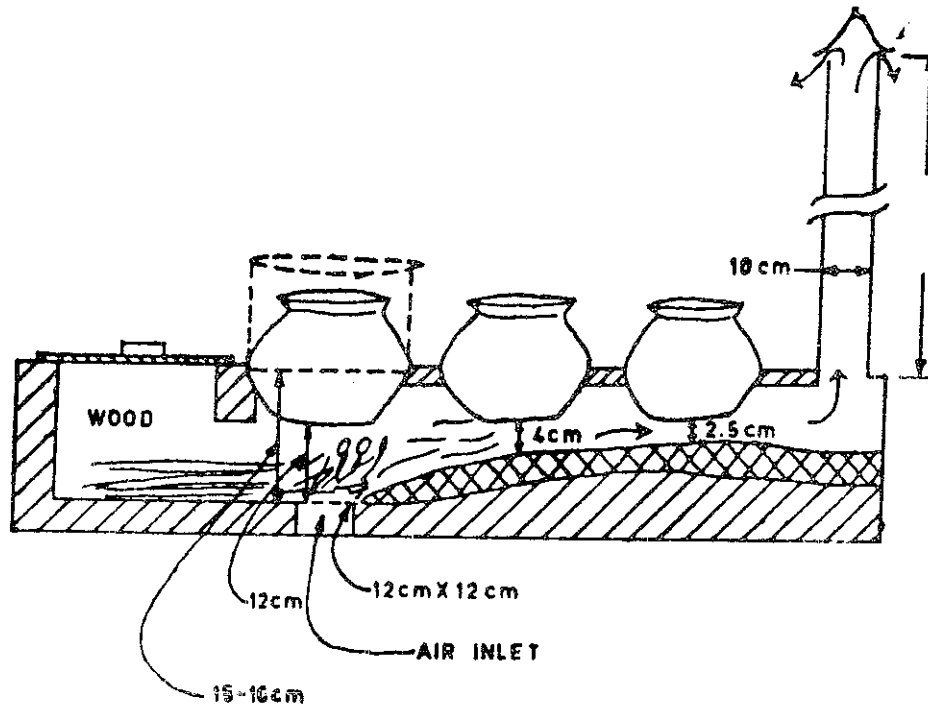


Fig. 2 — Cross-section of fuel efficient chula (astrale)

in the laboratory and around 15 per cent for the traditional design. At this stage the engineers were still rather reluctant to go in for field propagation. However, the government machinery, convinced of the promise of the stove became committed in its propagation. With their prompting the construction of chulas was taken up at two rural localities — at Ungra in Tumkur district through the group on Application of Science and Technology to Rural Areas (ASTRA) and in Uttara Kannada through our group. Since field propagation is best carried out by a local agency, it was fortunate for us that the youth club, Mahavishnu Yuvak Mandali at Unchagi took up this challenge. MSH trained their members in the proper technique of chula construction. Further training in chula construction was imparted at three special camps which were organized in Uttara Kannada district — one at Yadahalli in Sirsi taluk in October 1983, second at Unchagi in February 1984 and the third at Bengale in Sirsi taluk in March 1984.

The insistence of government on paying special attention to the scheduled castes and tribes had a salutary effect for our programme. Since full funding is available through this programme, some of our trained people took on government contracts for the chulla (now known as astrale) construction under this

scheme. This helped break down the initial resistance of Havyak Brahmins to go out to houses of other communities. Of all the components of our programme, this has permeated to the widest range of communities with 700 chulas being constructed by summer 1984. Furthermore they are all in active use except about 5 in scheduled caste houses in Bengale which were removed because of leakage through the roof where the hole made for the chimney was not properly plugged.

The rapid diffusion of the chula is due to several factors. A chula is needed in every house and a noticeable reduction in the quantity of fuelwood required makes an immediate impression on all concerned. The design is well adapted to local materials and construction techniques. The costs are low, all the material required can be purchased within Rupees 90. The government subsidies available are also very helpful. The Government of Karnataka now has an ambitious scheme of covering large parts of the State with this chula and the chances of its success appear bright.

Training

The experiment was initiated in November 1981 with a discussion meeting hosted by the

Hulgol Society. This society has continued to arrange discussions and lectures on specific topics such as fodder development for its members since the inception of the project. We held a more formal five day training programme at Yadahalli Junior College in Sirsi taluk in October 1983 to impart training on afforestation, fodder development, raising of nurseries and construction of chula. The training programme drew an excellent response from local youth clubs, women's clubs, students and teachers of National Service Scheme and local farmers. We also conducted shorter nature camps, training programmes for chulas, discussion groups for youth clubs etc.

Sahyadri Parisar Vardhini

Through these activities an interest in eco-development activities has steadily built up in the district. The Hulgol Society, the Junior College at Yadahalli, the High School at Masur and the Youth Club at Unchagi have played a very useful role in the process, hand in hand with the Indian Institute of Science and the District Rural Development Society, Forest and Ecology and Environment Department of the State Government. Our concept of all these working together seems to be paying off. The local groups have come together and in July 1984 established an eco-development-oriented voluntary agency called Sahyadri Parisar Vardhini with headquarters at Yadahalli to give further focus to these efforts.

DISCUSSION

There have of course been difficulties and disappointments on the way. Because of their educational background, the majority of the people working with us belong to the community of Havyak Brahmins, prompting one of our radical colleagues to call us agents of kulaks. Conscious effort has however enabled us to widen our contacts, and the Patagars of Masur have now come to play a significant role in the programme. We also feel acutely the near-absence of constructive public leadership of any stature in the rural areas where we are working, the leadership brought up by politics and co-operative movement over the last 30 years leaving much to be desired. Anybody in public life is

therefore almost automatically believed to be a self-serving unscrupulous person. Nevertheless, the eco-development activities have brought us into touch with a number of public spirited citizens. The government machinery has a reputation for being high handed and corrupt. But again, we have had contacts with a number of excellent officials from Range Forest Officers to Secretaries to Government who are honestly trying to do a good job. The academic and scientific community has no better reputation, often being thought of as social parasites sitting in ivory towers; but we certainly know of several examples to the contrary.

All of this flows from our society being made up of hundreds of social groups all pulling in different directions, full of mistrust, perhaps justifiably — for all others. In this situation tolerance and co-operation become suspect. For instance, our attempts at working with the government machinery have drawn virulent criticism from followers of Sundarlal Bahuguna some of them active in Uttara Kannada. Be that as it may, our three years of experience has convinced us that it is only a serious effort at local population, government machinery and scientific and technical experts all working together that has any chance of success.

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