

CHAPTER TWENTY-TWO



Shifting Cultivation, Sacred Groves and Conflicts in Colonial Forest Policy in the Western Ghats

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INTRODUCTION

The exposed soils of humid tropical hilly regions are notoriously fragile, being prone to severe erosion and loss of fertility. Even a small amount of erosion can lead to a large drop in yields. Quick impoverishment of soils in tropical rainforest areas has been attributed to the rapid weathering of soil minerals.¹ The lowering of organic matter in these fragile soils may be disastrous. For these reasons when such soils are deforested and brought into cultivation using traditional farming systems, natural soil fertility is rapidly exhausted by leaching. The surface soil soon becomes depleted unless large quantities of residues are returned to it.² The paradox of the luxuriance of forests and the poverty of soil has been further explained by the discovery that numerous mechanisms have evolved that enable tropical forest plants to capture and recycle the relatively restricted pool of elements in the soil solution.³

The nutrient capital of the humid tropical forest is not in the soil but in the vegetation itself. Once the forest has been removed through timber extraction or by burning and farming the previous nutrient cycle is damaged and the humus content falls. Mineralized nutrients are quickly leached by rainfall, or washed

away in surface runoff, or lost through harvest of agricultural crops. Altogether soil conditions typically deteriorate and farming generally ceases.⁴ Shifting cultivation evolved as a form of land use to circumvent major problems of tropical agriculture like soil erosion, low nutrient status and pest pressures. It is the brief period of utilization, small size of the plots and far-reaching preservation of the original surface roughness and soil texture due to residual tree stumps, absence of levelling, etc. which prevent intensive erosion.⁵ Many tropical secondary forests in South and Southeast Asia owe their existence and make-up, at least in part, to shifting cultivation. They appear to accumulate woody plant species at a relatively rapid rate. Biomass accumulates rapidly in secondary forests during the first fifteen years or so, but disturbance may modify this trend. High rates of litter production are established relatively quickly. More organic matter is produced and transferred to the soil in younger secondary forests than is stored in the above ground vegetation. Nutrients are accumulated rapidly in secondary vegetation and are returned quickly by litterfall and decomposition for uptake by roots.⁶

The soil and forest dynamics of the humid tropics explain the genesis of shifting cultivation as an indigenous agricultural system in our region. When population was low and fallow periods long, much of the land under this system would therefore remain under various successional stages of natural vegetation. Moreover, such land may be even richer than the natural vegetation in game animals. Hunting, therefore, would logically play a significant role in the economy of shifting cultivators.⁷ The present trend is to see shifting cultivation as part of an interacting system and view the problem in a symbiotic frame of reference. The term *swidden* has been revived to replace *shifting cultivation* which connotes the nomadic nature of swiddeners.⁸ In India, according to a 1956 estimate,⁹ 528,940 tribal families were dependent on shifting cultivation, mostly in the hilly regions, that is the north-eastern states and Orissa, central India and the Western Ghats. The north-eastern states and Orissa together accounted for 81 per cent of such families. The people involved and the total area under such cultivation (5421 square kilometres) may have been much greater before the severe restrictions imposed on them during the British period. However, this is a subject of much debate.

Though the concern for the safety of forests and their protection from 'vagrant' forest-dwelling cultivators was often proclaimed to be the chief reason behind the near total prohibition on shifting cultivation, particularly in the Presidencies of Bombay and Madras, British forest policy was frequently subject to fierce local contests over land use. This chapter, through a case study in the Western Ghats of south India, brings out many such conflicts in colonial forest policy. The policy, impelled at least in part by commercial and revenue considerations, was seen by the people of Uttara Kannada (also North Canara or North Kanara) as one aimed at 'exclusion of man and beast (cattle)' from the forest. The policy was normally justified in the language of conservation and sustainable utilization, and even more so in the twentieth century. Importantly it also helped to set the tone for forestry in independent India with its manifold problems and conflicts.¹⁰ The Forest Department has had to compromise between the state and the industrial sector, the latter of which surged ahead after 1947. These compromises have in fact brought hardships to ordinary people (and benefits to a few) and considerable ruin to the forests as this case study from the Western Ghats of Uttara Kannada shows.¹¹

SHIFTING CULTIVATION IN THE WESTERN GHATS OF UTTARA KANNADA

The hill ranges of the Western Ghats of peninsular India lie between 8° 22'–20° 40' North and 73°–77° East and cover a distance of about 1600 kilometres from the Tapti Valley in Gujarat to Kanyakumari at the southern tip of India. The annual rainfall may vary from 2350 millimetres in the north to 7450 millimetres in the south. Various kinds of vegetation occur all along the Western Ghats, including scrub jungles, *sholas*, montane grasslands and tropical deciduous forests. The most distinct feature, however, is tropical wet evergreen forest, which is more prominent along the windward side of the humid tropical belt of the southern region.¹²

Shifting cultivation, under the names *Kumri*, *hakkal* or *punam* (and there are other local names for it), has been an important agricultural system in the Western Ghats. However, *kumri* was

the more popular epithet for the slash-and-burn system of agriculture.¹³ Although in parts of the Western Ghats Hindu castes did depend on this mode of resource use, it was more often practised by 'tribal' groups for whom *kumri* was really an entire way of life encompassing economic, social and cultural spheres. The corporeal character of these communities was evident in the pattern of cultivation, where communal labour predominated and different families adhered to boundaries established and respected by tradition.¹⁴ Its overwhelming importance in structuring social life was strikingly manifest, too, in the many myths and legends constructed around it in tribal cosmology.¹⁵

Uttara Kannada, a low hilly district of the Western Ghats, lies adjacent to India's south-west coast.¹⁶ The high rainfall promotes the growth of luxuriant tropical forests, which, despite heavy pressures, still cover about 69 per cent of its 10,200 square kilometre land surface. *Kumri* or *hakkal* was an important form of agriculture which supported partially or entirely endogamous caste groups of farmers such as *Kumri Marattas*, *Kunbis*, *Karivokkals*, *Halakkivokkals* and *Mukris*. These groups have strong hunting traditions as well as practising the gathering of forest produce for subsistence and commercial purposes. Most of the local peasantry practise various artisanal pursuits such as mat- and basket-weaving, using a variety of plants. In the modes of subsistence of these endogamous castes there used to be a minimum of ecological overlapping, thereby effectively reducing competition between them and favouring a sustainable use of natural resources.¹⁷

The Prevalence of *Kumri*

It was Francis Buchanan, as an emissary of Lord Wellesley, who, travelling through Uttara Kannada in 1801, examined ancient records at Gokarna which contained allusions to *kumri* tax dating back to the 1450s. He observed coastal hills formed into terraces for cultivation of gingelly and black gram. He also noticed that

In the hilly part of the country, many people of a *Marattah* extraction use the *Cumri* or *Cotu-Cadu* cultivation. In the first season after burning the woods, they sow *Ragi* (*Cynosurus*), *Tovary* (*Cytisus cajan*), and *Harulu*

(*Ricinus*) Next year they have from the same ground a crop of *Shamay* (*Panicum miliare* Lamarck). These hills are not private property, and pay no land-tax; but those who sow them pay, for the right of cultivation.¹⁸

At the time of Buchanan's visit there already existed a considerable degree of denudation in the hills of coastal Uttara Kannada, which may be largely attributable to kumri. Other possible factors in this early instance of widespread denudation could have included the fuelwood and construction demands of the densely populated coastal tract, savannization for promotion of grass, deliberate forest clearance to protect crops, cattle and people from the depredations of wild animals, frequent wars and, lastly, the turbulent conditions that had subsisted ever since the collapse of the Vijayanagar kingdom during the mid-sixteenth century.¹⁹

It is actually very difficult to reconstruct from official documents the area historically involved in shifting cultivation in Uttara Kannada. It is likely that in the quest for fertile soils through three millennia of its occupation by agricultural communities, virgin forests were cleared in patches until a time when these communities started leading more settled lives and came to some kind of an equilibrium with their wooded environment. Whereas forests could regrow in most of the thinly populated interior places, this was rarely so along the coast. A phenomenal rise in coastal population had taken place after the Portuguese occupation of Goa in the early sixteenth century. The arrival of migrating peoples from Goa understandably subjected the fragile tropical hilly terrain of the coast to great ecological strain, so much so that there was only very scanty mention of kumri cultivation along the coastal villages during the British period. A notable exception to this concerns the clearance of a forest on the hills close to the Tadri port, reported by Blane, the Collector of Canara in 1847.²⁰ But there is ample mention of kumri in the interior of Uttara Kannada in various forest settlement reports, working plans for the forests and in other literature.²¹ Further, recent studies by Gadgil and this author reveal that scores of places all over the district, even today, bear names with epithets like kumri or hakkal that indicate the presence of shifting cultivation areas in the past. The ownership of most such lands is vested with the state.²²

Kumri in Uttara Kannada has been described thus:

In the uplands until lately one of the most marked forms of tillage was the growing of crops on burnt unploughed hill clearings manured with wood ashes. . . Up to 1848 there was little restriction and the people cleared any portion of the forests they chose. In 1848 orders were issued forbidding hill clearings within nine miles of the sea and three miles of large rivers, reserving certain trees, and reducing the area under *Kumri*. . . From 1848 The Madras Government continued their efforts to reduce the amount of clearing tillage and in 1860 clearings of all kinds were forbidden. After transfer of the district of Bombay (1862) this rule was relaxed and clearing was allowed to a limited extent. Since 1862 continuous efforts have been made to put a stop to this form of tillage, and the area has fallen from 7785 in 1863-64 to 844 acres in 1878-79.²³

Though kumri was a way of life and the major occupation of Kumri Marattas, Kunbis and Karivokkaligas, scores of others were directly or indirectly involved in it. It is very difficult to ascertain how many people were dependent on kumri and how much land area was under it until the mid-nineteenth century when severe restrictions were imposed on it. For instance in the Supa Peta district, V.D. Yennemadi, the Special District Deputy Collector of Canara in 1899, proposed allotting lands specifically for kumri cultivation not only to distressed Kunbis, and Marattas, but also to small numbers of Devlis, Mahars, Hanbars, Madivals, Kumbhars, Bhandaris, Gowlis, Bandis, Bavas, Sattarkars and Ghadis, who were all dependent on kumri cultivation but whose traditional occupations were quite different.²⁴ Incidentally the largest of these castes was the Kunbis, who were and are Konkani-speaking migrants from the Goa territory.

Even after its near total prohibition in most of Uttara Kannada an ill-defined but large area continued to be worked under kumri, even though it was carried on relatively clandestinely. The smaller farmers in forests had no other option as the Forest Department became the new landlord of their hitherto kumri lands. Even today the Department has control over 80 per cent of the total land area of the district. Thus in Supa *mahal*, with a population of 19,463 (in 1899) and an area of 1140 square kilometres, only 5 per cent of the land remained under cultivation. Distressed cultivators had encroached here on 270 hectares of forest land.²⁵ In Ankola Peta, 'where the

country is a maze of steep hills and dense jungle', every effort was made by the government to discourage kumri. Horsley, the Forest Settlement Officer in 1880, discovered that a considerable acreage was still under 'stolen Kumri'. He attributed this to the timidity of the supervising class of Brahman clerks. In one instance the village *patel* himself had a patch of 'stolen Kumri'. Horsley remarks are interesting in this respect:

The supervision class from Kulkarni to the Mahalkarry are unarmed Brahmin clerks – constitutionally timid and averse to physical toil – guided from village to village along narrow paths through thick jungle by the kumricutter; afraid to leave the path or lose sight of their guides. Obviously there is but a poor chance that such men should detect patches of stolen Kumri, cleverly selected in the heart of the densest thickets or on the secluded slopes of the most inaccessible hills²⁶

SHIFTING CULTIVATION AND LANDSCAPE MANAGEMENT

Ecologists, in recent literature, have started appreciating the resource-management systems of traditional societies, which while based on simple rules of thumb, in many ways parallel the modern ecosystem approach. Such societies, in diverse parts of the world, including India, have often co-evolved with their environment, modifying nature but actively maintaining it in a diverse and productive state. Such indigenous ecosystem approaches, which enshrine in them a pool of human experience spanning many millennia and many cultures have suffered severe setbacks under the more recent systems of exploitative management, often called scientific, elaborated largely by the colonial rulers.²⁷

Recent investigations by Gadgil and this author in Uttara Kannada show that kumri cultivation was carried out with considerable caution and in accordance with certain traditional land use plans which brought the community to an equilibrium with its environment. Accordingly in every village a sizeable portion of forest, from a few hectares to several hundred hectares, was strictly conserved as sacred grove which also functioned as 'safety forest', performing a multiplicity of functions including conservation of biodiversity and guarding of

the watershed. Such blocks of forest, known as *kan* in Uttara Kannada and adjoining districts, *devarakadu* in Coorg, *kavu* in Kerala and *devarai* in western Maharashtra are considered to be a legacy left behind by the shifting cultivators and probably dating back to pre-Brahmanical times. Occasionally there was no taboo on gathering of non-wood produce from such forests. In Uttara Kannada even pepper was taken care of in such kans and many spice gardens of the Havik Brahmans are situated close to them benefiting from the perennial supply of water and favourable microclimatic conditions.²⁸

The Government of Bombay itself actually recognized the watershed value of the kans of Uttara Kannada at a relatively early date, in 1923, and noted that 'throughout the area, both in Sirsi and Siddapur, there are few tanks and few deep wells and the people depend much on springs. . . . Heavy evergreen forests hold up several feet of monsoon rain'.²⁹

Such sacred kans, under the community management that prevailed during the pre-British period, formed a vegetational mosaic with other ordinary forests (from where people gathered their regular necessities like fuel, minor timber, leaf manure, etc.), kumri fallows in different stages of vegetational succession, grazing grounds, permanent fields and spice gardens. The varied physiography of the Western Ghats including cliffs and slopes, valleys, streams and rivers enhanced the heterogeneity of the landscape. This favoured the rich wildlife of the region vital for the welfare of the early farmers who were substantially dependent on hunting and gathering for subsistence.³⁰ Such a heterogeneous landscape contains an extensive amount of edge habitat with edge species and animals that use more than one ecosystem in close proximity for breeding, feeding and resting, in close accordance with the predictions of modern landscape ecology models.³¹ Most of the kans were not vegetational islands in the midst of barrenness as they are today, but were contiguous with forest fallows and ordinary forests.³²

In spite of their diminished size and exploited condition³³ the kans continue to be important centres of biodiversity even today. *Dipterocarpus indicus* of the Western Ghats has its northern limit in Uttara Kannada, some of the kans providing its only refuge. *Myristica* swamp, a rare and threatened habitat of the Western Ghats of Kerala has been located within a kan of Uttara

Kannada. Rare *Myristica magnifica* and *Pinanga dicksoni*, an endemic palm of the Western Ghats, are mainly confined to this swamp. There are several such plant species mainly sheltered in and confined to the kans of Uttara Kannada. Elsewhere along the Western Ghats, too, the sacred groves have been found to be refuges for rare plant species.³⁴

In the Assam region, in an analogous fashion, it has been observed that the practice of declaring part of the forests sacred in shifting cultivation areas has done a great deal to keep the vegetation unchanged. These groves represent 'nature's primeval forests. People do not dare to cut the trees for fear of disturbing spirits. Hence these forests comprise rich stores of botanical specimens which have become extinct in other parts of Assam'.³⁵ Such a system of sacred groves may permit biological resource use at a near maximum sustainable level, while keeping the risk of resource extermination at a low level.³⁶

Presumably due to such a system of forest conservation Buchanan, in 1801, could observe in Uttara Kannada degraded and secondary forests interspersed with patches of lofty evergreens in which wild pepper was often growing. He further stated that

the forests are the property of the Gods of the villages in which they are situated, and the trees ought not to be cut without having leave from the Gauda or headman of the village who here also is priest (pujari) to the temple of the village God.³⁷

In addition to protection of sacred groves shifting cultivators of the Western Ghats often left uncut large trees, members of the genus *Ficus* and often *Mimusops*, *Ochrocarpus*, and economically important ones like *Terminalia chebula*, *Mangifera*, *Artocarpus*, *Garcinia*, *Myristica*, *Strychnos* and *Cycas*.³⁸ It may be mentioned that *Ficus* species which have been protected in India from perhaps the Indus valley culture down to this day have been identified as keystone plant resources of the tropical forest.³⁹

KUMRI AND TIMBER ENRICHMENT

Most of Uttara Kannada district has rainfall exceeding 2000 millimetres and the expected climax vegetation would thus be

evergreen forest. The evergreen timber had very little commercial value until forest-based industries were set up here in the 1940s. If indeed the climax evergreens were to be present all along its potential rainfall zone of 2000 millimetres then more hardwood species like teak (*Tectona grandis*), blackwood (*Dalbergia latifolia*), *matti* (*Terminalia tomentosa*), *beddi* (*Adina cordifolia*), *nandi* (*Lagerstroemia microcarpa*), etc. would be confined to areas with less than 2000 millimetres of rainfall in a narrow belt towards the north-east of the district. If this had been the case the British, who moved into the area in 1790-1810, would not have developed any substantial interest in the Ghats forests. However, on the contrary the British did indeed take a great interest in the forests of the region, primarily due to the timber to be gained from the deciduous patches of Malabar, Coorg and Uttara Kannada. These forests abounded in invaluable teak, blackwood, catechu (*Acacia catechu*), *matti* and *kino* (*Pterocarpus marsupium*), and immense quantities of bamboo. The British needed these and several other timbers from such deciduous patches for shipbuilding, military purposes, railways, cotton gin factories, public works, dyeing and for supporting their flourishing trade.

Such deciduous forests in the literature are simply called 'mixed deciduous forests' or simply 'moist deciduous forests'. This does not distinguish them from the climax deciduous formations found in rainfall zones between 2000 and 1500 millimetres. Therefore Pascal applies the term 'secondary moist deciduous forests' for the former kind, the potential area of which corresponds to that of climax evergreen forests. Shifting cultivation is believed to be one of the major causes of the origin of such forests. Such secondary moist deciduous forests might progress by a gradual enlistment of evergreen species into a semi-evergreen formation, a regression to a more evergreen state being prevented by the deterioration of soil conditions.⁴⁰ These two kinds of forests formed the backbone of British forestry, particularly in Malabar and Uttara Kannada. Places in Uttara Kannada like the Gund plateau, Kali and Nersol slopes, Arabail Ghat, Gangavali valley and Soppinahosalli, famed for their teak and other hardwoods during the British period, are in fact properly classified in the evergreen forests belt. In such places the vegetation was generally a mosaic of deciduous, semi-evergreen and

evergreen forests, according to the picture we can reconstruct from the forest working plans of the early twentieth century and other historical documents. The former two kinds of forests, at least, are likely to be regenerative in *kumri* areas.

Thus Aitchison observed in the Soppinahosalli working plan area of Kumta taluk that the forests mainly consisted of evergreen, semi-evergreen, teak-bearing deciduous and non-teak-bearing deciduous patches. He noted the effect of *kumri* in several forest compartments. For instance in compartment Number 1, where *kumri* cultivation had once been practised, the forest was 'deciduous with or without teak. Semi-evergreen tangle of canes, patches of good teak. Patches of evergreen sometimes with teak and big *nandi*.'⁴¹ Aitchison further observed that

former *kumrying* has considerably upset the distribution of age classes. The middle slopes of many of the hills consist at present of a dense tangle of young growth, and patches of young even aged woods are common everywhere. In times to come the number of trees in larger diameter classes will be very much higher.⁴²

Elsewhere in Uttara Kannada too *kumri* had significantly changed the composition of the original evergreen forest and converted it into deciduous patches stocked with choice timber trees and bamboo or regenerating evergreens sprinkled with deciduous hardwoods, all of which formed a grand mosaic with savannized portions and primeval evergreens. Dhareshwar reported in 1939 that the oldest teak of the Uttara Kannada coast, estimated to be 200 years old, occurred in the Balematt valley in Honavar taluk. He also found in parts of the reserved forest, not much disturbed by man, a pre-climax formation overwhelming the sporadic patches of teak.⁴³

WESTERN GHAT FORESTS: EARLY BRITISH PERIOD

From the accounts of Buchanan, Cleghorn, Stebbing, various travelogues, forest working plans and forest settlement reports we may conclude that the widespread prevalence of shifting cultivation notwithstanding, dense tropical forests covered most of the Western Ghats, particularly from Uttara Kannada southwards.⁴⁴ Two British engineers who penetrated into the Ghats

of southern Kerala, during 1817-19, were captivated by the wanton beauty of the hills:

The larger portion of this desolate region is covered with lofty and luxuriant green forests in every direction. . . . The whole scene is truly sublime; a large portion of this wild tract has not been explored from the want of guides, and the difficulty of penetrating such wild extensive regions.⁴⁵

In the words of Cleghorn, the first Conservator of Forests for the Madras Presidency,

In the beginning of the Century [nineteenth] an immense, almost unbroken forest covered the Western Ghats, from near the watershed to the most elevated ridges — left to nature, thinly peopled, abounding in wild animals and all the higher portions, without exception covered with timber.⁴⁶

In spite of over one century of commercial forest-working under British rule the Uttara Kannada forests continued to have high potential even in the 1920s which can be summed up in the words of Copleston:

Trees like teak, nana, Blackwood and Ain with Kindal and Jamba increase in height and diameter in the south end of the Presidency. In North Kanara they grow to heights of 100 feet with girth from 7 to 18 feet. Bamboos form fine undergrowth. These are by far the finest timber forests in the Presidency.

In the Kanara district there are areas of considerable extent of the original primeval forest, real virgin tropical forest of lofty trees and dense luxuriant growth. The shade in the hot weather dense, the atmosphere is always humid and temperature very even throughout the year. Springs and small streams flow throughout the hot weather. Scores of different species are crowded together from evergreen shrubs to lofty giant trees 150 feet height. . . . palms are abundant, dense impenetrable cane brakes are common and the trees are often festooned with graceful creepers.⁴⁷

The 'problem' of shifting cultivation notwithstanding there existed so much forest in Uttara Kannada that, following the Indian Forest Act of 1878, upwards of 90 per cent of the entire district was included in forests.⁴⁸ When a working plan for sandalwood (*Santalum album*) was prepared in 1952 for Sirsi and Siddapur most of the trees were found in the *bettas* or leaf-manure forests and 'minor forests' close to human habitations.⁴⁹

Uttara Kannada was also a haven for wildlife. The observation made by Fryer in 1676 is noteworthy:

At Karwar no beef was to be bought; but game was abundant, and the English factors went to the woods, sometimes for a week at a time. They lived on fish, water-fowl, peacocks, green pigeons, spotted deer, Sambar, wild hogs and sometimes wild cows.⁵⁰

Another traveller Ovington observed in 1690 that 'in Karwar deer, peacock and wild bulls and cows were almost the daily furniture of the factor's table brought home by the messengers without any further expense than that of powder and shot'.⁵¹

Kumri fallows grew not only timber trees and bamboo or grass and herbs for cattle and wild herbivores, but also supplied a variety of produce for the subsistence of the community. This fact was hardly appreciated by British foresters who, on the whole, were highly antagonistic towards kumri cultivators. For instance Horsley, the Forest Settlement Officer for Uttara Kannada, in 1880, was surprised by the relative well-being of the inhabitants of the kumri villages of Ankola:

Then again here as elsewhere the jungle feeds the junglies in a dozen ways that an outsider cannot fully understand though he notes the result. For instance I observed in these kumri villages that the inhabitants eke out a livelihood to a considerable extent by making baskets out of the cane which grows abundant all round them and which they get for nothing by headload at a time on the plea of requiring it for agricultural purposes. There is a steady demand for these baskets, and at the great annual fare of Gokarna the sale of them is enormous.⁵²

The gregarious occurrence of an important starch-yielding palm *Corypha umbraculifera* (talipot) was a feature of some of the kumri areas of Honavar and Kumpta taluks. Not only some of the dwelling kumri Marattas but even the poor all along the Uttara Kannada coast traditionally gathered the flour from the pith of the palm, more so during time of famine.⁵³ The palm leaves were widely used for basket and mat-weaving as well as for thatching purposes. Yet another palm of *Phoenix* species which grew in abundance along the Supa ghats, where kumri was widespread once, contributed substantially towards the livelihood of the Kunbis. Kunbi women here had 'considerable skill in making mats which are bought by traders, and cart-loads of mats are exported to several places'.⁵⁴

KUMRI: THE FORESTER'S MISCONCEPTION

It can be argued relatively convincingly that British colonialism was an ecological watershed in the history of India. In the upsurge of commercialism in Europe and elsewhere after the Industrial Revolution, a phenomenon which was characterized by the much enhanced utilization of natural resources for fuel and transformation into marketable commodities, human societies were also radically transformed, with far more opportunity for individuals to act economically on their own. With the possibilities of unlimited expansion in the consumption of resources, the capacity of individuals and nations to command access to resources became enormously important. Britain, in particular, was able to wield an influence and develop an economic penetration far beyond her shores, which was reflected, not least, in an immense demand for naval and construction timber and associated goods. Denied access to North American sources of timber after 1776 she turned increasingly to South Africa, India and Australia for timber resources. No wonder, then, that the British saw formidable rivals in the kumri cultivators of the Western Ghats, groups who represented a threat to their plans to acquire control over the Malabar and Mysore forests.⁵⁵ But this did not mean that the British immediately embarked on well-developed schemes to protect those forest resources. In the words of Hugh Cleghorn, a Company surgeon and later first Conservator of the Madras Presidency Forests,

The English have been most regardless of the value of the forests, partly owing to their climate, but chiefly because England has been so highly favoured by vast supplies of coal; and the emigrants to the United States have shown their indifference to this subject by needless destruction of forests in that country of which they now feel the want.⁵⁶

Weighed against the direct benefits to the empire from forests, the revenue generated from kumri was trifling. Cleghorn felt the revenue arising from the tax of Re 1 per acre of kumri was trivial compared to the value of the wood. T.L. Blane, the Collector of Canara, considered the practice 'wasteful and improvident'. The Superintendent of Nuggur division told Blane, 'The revenue paid upon this destructive kind of cultivation is

very trifling, and if the wood were preserved in accessible spots, the duty upon the export of timber and firewood would exceed it ten fold'. Thomas Cannan, a coffee planter, added that government was the great loser 'there being very seldom one crop of ragi taken from any one patch, which if cultivated with coffee, would have yielded something every year for half a century, in the way of rent or tax'. Such opinions persuaded Cleghorn to write to the Madras government that 'the chief evils from this rude system of culture are the destruction of valuable timber, at present urgently required for ship-building and railways, and the rendering of land unfit for coffee'. At the instance of Cleghorn kumri was prohibited in 1860 except in some small areas.⁵⁷ After the transfer of the district to Bombay in 1862 this rule was relaxed and clearing was allowed to a limited extent. But in 1890 kumri was prohibited altogether except in a few villages.⁵⁸

Among the recommendations of Cleghorn (and on the strength of which the government prohibited kumri in 1860) may be mentioned the following: First, that 'in addition to climatic considerations, the chief evils of this rude system of culture are the destruction of valuable timber, at present urgently required for ship-building and railways, and the rendering of land unfit for coffee'. Second, that 'in North Canara (Supah and Yellapur) where there is much most valuable timber, and the conservancy of which is financially profitable . . . I would disallow *kumari* without previous sanction'. Third, that 'there cannot be a doubt that it would be better if cultivation was confined to lands permanently cleared . . . particularly if the plots were enriched by cattle and leaf maure'. And that, all hill cultivators 'endeavour to obtain a precarious subsistence by scattering grain after burning the jungle, and thus avoid toil of careful cultivation'.

On sanitary considerations in a damp and forested tract, subject to the ravages of malaria and influenza, Cleghorn was of the view that 'permanent clearings are of unmixed advantage; the dense thorny scrub which succeeds a deserted *kumari* is decidedly more injurious to health than lofty forest open below, and harbours destructive animals to a greater extent'.⁵⁹

On the question of kumri the forest officers of Uttara Kannada often lacked the humanism of revenue officers. For

instance when Wingate, the Forest Settlement Officer for the area, pleaded in 1891 for grants of small areas for kumri in some of the hilly villages of Kumta taluk, as had been awarded in Ankola,⁶⁰ the idea was vehemently dismissed by the foresters. Haselden, the Divisional Forest Officer, commented:

Regarding kumri, the undersigned can but repeat that it is a system of cultivation so destructive in its operation and so unscientific a nature, that it must be stamped out; that the kumri cultivation has been sanctioned on the ten years rotation system in the Ankola Taluka, is much to be regretted; it was a great mistake to have ever permitted it; it is however working itself out, and no doubt will die out . . . and the undersigned will always oppose to the extent of his ability any extension or continuation of kumri . . . it simply encourages an idle system of cultivation.⁶¹

MacGregor, the Conservator of Forests in the Southern Circle, stated:

This is a proposition apparently based on the *post hoc ergo propter hoc*, argument . . . It is, however, assuming the correctness of the supposition, difficult to understand why the individuals, who have nothing to do at home, cannot find time to do work for the land-holders in the villages, although they used to find time for it when they had plenty of cultivation of their own to attend to . . . it is vain to expect the thing to die out naturally, or by degrees. People won't willingly abandon a mode of cultivation, that gives a maximum crop at a minimum expenditure of time, labour and capital, even though it should ultimately cause the complete denudation of the mountains . . . The theory that *kumrivallas* never cultivate lands in the ordinary way is purely imaginary.⁶²

SILENCE ABOUT COMMUNITY MANAGEMENT

What intrigues the forest historian is the near total silence of British administration towards indigenous systems of resource management, except for casual references. Buchanan construed the system of the sacred groves in Uttara Kannada as a 'contrivance' of the people to prevent the government from claiming the property.⁶³ Though kans were encountered throughout Uttara Kannada and described as detached blocks of evergreen forests, distinct from other forests, their role as temples of worship of

the peasantry never found any mention in official documents.⁶⁴ However, it is true that the ecological role of the kans was highlighted by the Government of Bombay.⁶⁵ A lone exception was the report which an Indian officer, V.D. Yennemadi, made to the Collector of Kanara pertaining to the Supa taluk:

I have invariably excluded from the plots selected for cultivation evergreens called *kan* in Kanarese and *rai* in Marathi. They exist generally in the vicinity of village sites. They are believed by the people to be sacred to the village god or goddess, and have been preserved from time immemorial.⁶⁶

Recent studies by Gadgil and Vartak and Subash Chandran and Gadgil and many others have brought out much information on such sacred groves.⁶⁷ A recent survey by Gadgil and Subash Chandran in a 25-square-kilometre area revealed that about 6 per cent of the landscape was maintained as inviolable sacred groves by the pre-Brahman peasant society of Siddapur taluk in Uttara Kannada during the pre-British period.⁶⁸

A very informative and pioneering account of the management of common property resources in the traditional style, prevalent in the Western Ghats, is given by Gadgil and Iyer.⁶⁹ Since the state monopoly over the forest lands during the British period was extended to over 80 per cent of the total area of Uttara Kannada village-community management presumably, collapsed. Buchanan in 1801 had observed pepper forests under community management; during his visit made soon after the British conquest of the district he was told by villagers near Karwar that forests were considered to be the property of the gods of the villages in which they were situated and trees ought not to be cut without the permission of the headman.⁷⁰ Though such community management of forest resources presumably collapsed all over Uttara Kannada ever since the onset of a state monopoly over forests, Collins found in 1922 the remnants of village-community management over the small woodlots within their limits in several villages of the otherwise denuded coastal tract.⁷¹ Halkar village in Kumta taluk is a shining example of such a case which continues to this day.⁷² Under community management there existed several regulations over gathering of natural resources as well as hunting.⁷³ No doubt *kumri* was intensified in Uttara Kannada with the arrival of Kunbis from

Portuguese Goa; nevertheless Uttara Kannada still had the finest forests in Bombay Presidency. In fact here, as elsewhere along most of the Western Ghats, *kumri* and forests existed together.

At a time when agricultural technology was poorly evolved to suit tropical humid and hilly tracts with fragile soils that were prone to severe erosion and quick loss of fertility, permanent clearings for cultivation (as advocated by Forest Conservators Cleghorn and MacGregor), would have been not only useless but even injurious. Furthermore the damp and rainy climate of Uttara Kannada and other Western Ghats regions was hardly suitable for pastoralism. The cattle were notoriously poor according to Buchanan, a situation which prevails in the district to this day. Savannization of the hilly coastal tract of Uttara Kannada, where tropical evergreen forests would be the natural vegetation, had already caused severe denudation of the hills even at the time of Buchanan's visit in 1801. There would not have been enough cattle manure to sustain more permanent agriculture. Moreover *kumri* is a form of non-tillage agriculture causing a minimum of disturbance to the hill soils, unlike permanent plough agriculture which would have caused enormous soil erosion in addition to weed invasion and rapid loss of soil fertility. Indeed there could not have been any viable economic alternative to *kumri*, at the time of its prohibition, other than to take advantage of the labour surplus generated by this ban for public works, railways, forests and plantations.

The several letters quoted by Cleghorn give a hint of what may really have been behind the banning of shifting cultivation. Captain Anderson, a revenue official, favoured *kumri* stating that 'it required no (live) stock or agricultural capital. It requires less labour than any other description of cultivation ... and affords (an adequate) subsistence'. On the other hand a coffee planter attacked it vigorously, saying that 'it is carried on by a set of savages, in every sense of the word, who would be much more profitably employed on public works or on coffee plantations'. Cleghorn himself wrote of the shortages of labour for forest works in Uttara Kannada due to death and diseases prevalent among the workers.⁷⁴ The conditions of labour in Indian coffee and tea plantations were worse than those of slaves and people had to be brought there under duress.⁷⁵ Therefore Gadgil wonders

whether the apparent truth that shifting cultivation was banned to save forests from destruction was the operative truth, or whether shifting cultivation had to be banned to force people out of a way of life they preferred to provide labour for public works and plantations.⁷⁶

In Manantoddy in the Wynaad district of Kerala, early in the nineteenth century, the British had to encounter a tribal rebellion. As the tribals were not ready to work in coffee plantations (already fifty-three in 1866) Tamil-speaking untouchable labourers had to be imported in adequate numbers for clearing the forest and cultivating coffee.⁷⁷ In any case the problem of plantation labour was not felt much in Uttara Kannada as in the low elevation hills here coffee did not thrive well and tea and rubber were never introduced.

Large expanses of forests (especially in the evergreen forest belt) were sold at extremely low prices to European planters in Travancore, Cochin, Malabar, Nilgiris and Coorg to raise tea, coffee and rubber plantations. The range of these cash crops covered high-, medium- and low-elevation hills where forests were ruthlessly cleared as evergreen timbers had hardly any market value; but the plantation economy itself had a high level of timber demand for fuel and packaging. Road and railway networks were developed to facilitate the export of tea, coffee and rubber, as well as for transport of timber.⁷⁸ In Uttara Kannada, after protracted exchanges within the British bureaucracy over the revenue-generating potential of spice gardens as against evergreen forests (involving both forest and revenue officers), the Government of Bombay decided to favour the Havik gardeners by granting them up to 9 acres of forest for each acre of garden, for the harvesting of leaf manure. These leaf-manure forests were, for all practical purposes, within the control of the gardeners themselves. Thus to make 1 acre yield profitably the produce of 9 acres of forest was found to be necessary. But unlike kumri the gardens yielded a relatively high revenue to the state. On the other hand most of the poor peasantry had to resort to the 'minor forests' which were already degraded forests or savannized lands that were still found close to human habitations. The collapse of decentralized village-community management, followed by unregulated biomass extraction by all the public concerns, hastened the tragedy of these

common lands. Prohibiting the entry of the people into state reserved forests led to rapid deterioration and desertification of these poorer marginal lands.⁷⁹

The kans of Uttara Kannada, which were evergreen sacred groves as well as safety forests, performing a variety of economic and ecologic functions, were integral parts of the village landscape of Uttara Kannada.⁸⁰ The Government of Bombay treated these sacred groves as state reserved forests primarily on an ecological basis.⁸¹ But simultaneously the government introduced a deplorable contract system for collection of non-wood produce. In the words of Wingate in 1889:

I am still of the opinion that the system of annually selling by auction the produce of kans is a pernicious one. The contractor sends forth his sub-contractors and coolies who hack about the *kans* just as they please; the pepper vines are cut from the roots, dragged from the trees and the fruit then gathered, while cinnamon trees . . . are all but destroyed. 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 or 15 years ago.⁸²

Added to that several of the kans, which originally sheltered valuable biodiversity characteristic of the climax natural forests of the Western Ghats, were merged with regeneration forests, lost their identity and were treated on a par with ordinary forests and subjected to commercial timber exploitation.

The development of railways, in the words of Cleghorn, caused an 'immense demand for timber. . . . I may specify the Palghat, the Shevaral hills and the North Arcot hills; in these the old woods have everywhere fallen to meet the urgent demand for timber'.⁸³ Guha controversially considers the building of the railways network, soon after the Indian Mutiny, as the crucial watershed in the history of Indian forestry. The main objectives for railway development, he asserts, were transport of natural resources out of the Indian countryside and easy movement of troops.⁸⁴

THE SUPPRESSION OF EVERGREEN FORESTS

The climate in Uttara Kannada, unlike the more southern Western Ghats, which had an extended rainy period, did not

suit plantation crops like coffee or rubber. Therefore the early forest-workings concentrated on the exploitation of large-sized hardwood trees like teak and blackwood and, after their rapid depletion, one by one, several other hardwoods. Forest working plans appeared one after the other covering more and more interior areas and more and more tree species. Indeed most of the hardwood which sustained British forestry was the unrecognized contribution of the kumri cultivators as a result of vegetational changes through ages of kumri. The British tried to achieve this feat through massive clear-felling of species-rich natural forests for raising teak plantations. Monoculture of deciduous teak along the evergreen forest belt was more of a misadventure in an unknown terrain and dates back to the very beginning of the British occupation of Uttara Kannada. Way back in 1804, four decades before the launching of the much-lauded Connolly plantations of Nilambur in Malabar, small plantations were raised in Honavar, Ankola and Sadhashivgad in coastal Uttara Kannada by Colonel Gilbert. These plantations, revisited half a century later by Cleghorn in 1861, were found to be utter failures, 'The soil is laterite, and the exposed situation of the sea-shore is most unsuitable; a worse locality could scarcely have been chosen.'⁸⁵ Nevertheless the great demand for teak timber for shipbuilding, and later for expansion of railways, prompted the British to initiate large-scale vegetational changes in favour of teak. Most of the forest working plans explicitly stated their chief objectives to be the extraction of all valuable, marketable timbers, firewood and bamboo from the forests and the clear-felling of areas (ranging from 25 to 50 per cent of each coupe) for replanting with teak.

In a later retrospection Brito in 1960 gave the reasons for failure of teak in Karwar fuel reserves. The 1933 system of 'clear felling and wholesale burning, and planting in well burnt patches, did not give appreciable results . . . mainly due to the fact most of the well burnt patches were not necessarily the best suited for planting of teak . . . the unburned area in semi-evergreen forests always resulted in invasion of the area by valueless species and other rank growth'. A 1943 modification restricting clear-felling and planting to one-third of the area 'best suited for teak' was also futile due to failure of proper site selection. In the remaining two-thirds of the coupe the contractor clear-felled as much of

the area as he desired. This gave him the freedom to leave unfelled any area containing useless growth after he had fulfilled his obligatory condition of clear-felling one-third of the coupe.⁸⁶

Teak plantations along the evergreen forest belt, often causing severe soil erosion, desiccation of the characteristic evergreen species and fire-proneness, resulted in considerable fragmentation of the forest ecosystem and created enormous hardships to agriculturists, resulting in agrarian protests. If kumri was bad, the teak plantations amounted to a form of glorified kumri by the Forest Department. At least after kumri the forests often regenerated vigorously, rich in canebrakes and with a sprinkling of deciduous hardwoods including natural teak. But after the stoppage of kumri foresters often saw with consternation the return of the evergreens. Thus Pearson reported that in many parts of the Ankola high forest, evergreen forests were 'threatening to come back' to the peril of teak and other hardwoods.⁸⁷ Clear-felling and burning, and then clearing of both underwood and overwood evergreens near deciduous hardwood species, were the common practices adopted by British foresters.⁸⁸

THE MYTH OF SUSTAINED YIELD

Every forest working plan of Uttara Kannada, beginning with the early twentieth century, proclaimed 'sustained yield' as the basis for forest-working. The sustained-yield calculations were rarely founded on any scientific facts and relied more on assumptions. For instance in the high forests of Ankola taluk, Copleston's plan for Arabail 'was more in the nature of an exploitation scheme than a silvicultural system'.⁸⁹ All the subsequent plans for the region, involving Arabail, Gangavali Valley and Ankola high forests proclaimed sustained yield as the basis of exploitation. At the same time the girth limits originally prescribed were progressively lowered as can be seen from the Table 22 1.

The table shows that the exploitable girth of teak plummeted from 6.5-7 feet in 1901 to a mere 4 feet in 1945, in spite of 'nearly one century of monoculturing in teak'.⁹⁰ Indeed sustained yield became a convenient tool in the hands of the foresters to exploit the forests according to the market demands for timber,

firewood and bamboo, and for defence and railway requirements. As older forests declined in productivity more interior forests were organized under forest working plans and an increasing number of timbers were brought to the markets. Bamboo was often considered a weed in the timber forests, and was often burned down as well as transported in enormous quantities to urban centres. Bamboo, often known as poor man's timber, has manifold uses. During the general famine of 1865-6 thousands of people from the scarcity-stricken Bombay-Karnataka region came to Uttara Kannada and survived the critical period by subsisting on bamboo seeds.⁹¹

Table 22.1
Exploitable girth of timber under
working plans for Ankola high forests

Name of the tree	Copleston 1901	Pearson 1918	Miller 1918	Millet 1927	War felling 1940-5
<i>Adina cordifolia</i>	-	7'-8'	7'	7'	5'
<i>Dalbergia latifolia</i>	-	6'	6'	7'	5'
<i>Lagerstroemia microcarpa</i>	-	6'-7'	7'	7'	5'
<i>Tectona grandis</i>	6.5'-7'	6'	6'	6'	4'
<i>Terminalia paniculata</i>	-	-	7'	7'	5'
<i>Terminalia tomentosa</i>	-	6'-7'	6'	5'	5'
Other species	-	6'	7'	7'	5'

Source. Gadgil and Subash Chandran, 'On the History of Uttara Kannada Forests'.

HUNTING FOR SPORT AND OVERKILL

Shifting cultivators maintained a substantial dependence on hunting to meet their protein requirements. In fact the landscape under village-community management was a mosaic of heterogeneous elements with pristine sacred groves forming the core. Hunting by village societies was subject to various regulations imposed by the community itself. A variety of wild animals flourished in Uttara Kannada. Forest reservation by the state

during the British period resulted in the collapse of community management, while hunting by natives for subsistence was no longer tolerated. On the contrary British sportsmen, assisted by native *shikaris*, went on a hunting spree decimating the rich wildlife of the region.⁹² Campbell cited over-hunting for sport as the major reason for the decline in the population of *gaur* (*Bos gaurus*) and spotted deer (*Axis axis*). For instance at

Dandeli in 1867 from a herd of not less than 150 to 200, three splendid stags were picked out and shot in a few moments. Now, in about the same place, the sportsman has had a lucky morning if he sees a small herd of two and gets one stag. . . Pot-hunting native *shikaris* and some of the Government armed servants, at posts throughout the district, are responsible for the disappearance of *chittal* (*Axis axis*).⁹³

The nineteenth century also witnessed a great trade in skin and antlers of spotted deer and in skin of barking deer (*Muntjacus muntjacus*).⁹⁴ Game birds were also shot down recklessly; 'Four guns are known to have killed 113 couple (of quail *Perdica*) in one day about Haliyal'. . . 'Regarding snipe (*Gallinago spp.*) hunting the largest known to one gun is twenty seven couple.'⁹⁵

JUNGLES, WEEDS, DISEASES AND DECLINE IN POPULATION

In 1890 kumri, with isolated exceptions, was prohibited throughout Uttara Kannada. Simultaneously forest rules, including the game laws, were made much more stringent. The Forest Department became the owner of nearly 90 per cent of the total lands of the district and, consequently, village-community management of common property resources, characteristic of most of pre-British India, totally collapsed. In the words of social workers Masur and Basrur:

And what is even still worse is that the conditions which make life intolerable and compel desertion and emigration are being deliberately developed in the entire forest policy with the sole and avowed objective of excluding men and their cattle from the forest zone. And the Government have practically done little, yet, to prevent a catastrophe which must inevitably follow in the wake of the combination of such disquieting conditions.⁹⁶

A phenomenal decline in agriculture and population took

place. The Forest Administrative Report of Kanara for 1917-18 admitted that 'the decline of the agricultural population is, no doubt, due to the increasing pressure of forests upon agriculture caused by improved conservancy with over-afforestation'.⁹⁷

Copleston, the Chief Conservator of Forests for Bombay Presidency, was of the view that:

The Kanara ryots' lot has always been an unending struggle against malaria and wild pig. Night after night when his crops are ripening, in October, he would be perched up in his little 'machan' down in the damp cold paddy fields scaring away the pig; this too at a season when the malarial mosquito abounds. . . . With elephants about, he felt unsafe on his flimsy platform. . . . he took refuge in a big tree . . . where he was unable to guard his crops efficiently from pig; consequently, several of the small isolated fields had to be abandoned.⁹⁸

In spite of the existence of thick forests there was a loud cry for leaf manure and other biomass supplies for the population. Instead forests were increasingly regimented under a growing number of working plans for export of timber, firewood and bamboo to distant centres of consumption such as Porbunder and Bombay. Even several of the non-wood products, on the collection and sale of which many people depended, like wild pepper (*Piper nigrum*), cinnamon (*Cinnamomum spp.*), wild nutmeg (*Myristica malabarica*), cane (*Calamus spp.*) myrobalan (*Terminalia chebula*), khair (*Acacia catechu*), honey, etc. became state property and were collected through the agency of contractors. People also forfeited their traditional rights to collect various wild fruits and seeds for food from the forests which were brought under the reserved category; the public was allowed certain privileges only in the 'minor forests' which were already rocky and impoverished terrain with scrub or savanna. Most villages substantially lost their silvan environments to the monoculture of teak and retained access only to forests that were fire-prone, topsoil-eroded and infested with weeds. Stringent punishments, both individual and communal, were imposed for any violation of the forest rules.⁹⁹

Wingate noted that since the stoppage of kumri the prosperity of Hongeri, Ulurmatha and Chimoli hill villages in Kumta

has considerably diminished, some 470 acres of land having been thrown up, while there is a decrease of about 13 per cent in the

population. The decline is attributed chiefly to want of labour, which in former days the hill tribes . . . in a great measure supplied . . . suddenly stopping the practice in these parts has been the cause of much hardship, and the enforced emigration of the hill tribes has injured the prosperity of the district.¹⁰⁰

Yennemadi reported that the people of Supa attributed the tremendous loss of life there (births during 1894-8 put at 2752 and deaths at 3979) to the stoppage of kumri and return of the jungle.¹⁰¹ Collins found that in Siddapur habitations and kans were getting infested with prolific weeds such as *Lantana* and other thorny plants. The 'minor forests', which were mostly former shifting cultivation areas also became infested with *Lantana* which harboured pigs, posing a serious threat to agriculture.¹⁰² As problems mounted for agriculture, labour shortages increased and yields became poor. 'Villages were afforested as fast as they were deserted'. Malaria, wild elephants, tigers and panthers and wild pigs were on the rampage.¹⁰³ The census returns of the inland tract of Uttara Kannada (Siddapur, Sirsi, Yellapur, Mundgod, Haliyal and Supa taluks) revealed the phenomenal decline in the population as shown in Table 22.2.¹⁰⁴

Table 22.2
Decline of population in the inland tract of Uttara Kannada

Year	Census Returns
1881	1,95,526
1891	1,99,803
1901	1,90,257
1911	1,66,989
1921	1,43,349
	(drop in population of 56,454 since 1891)
1931	1,44,724

Such a drastic decline was due more to excess of deaths over births than emigration to other areas. During the period from 1890-1 to 1914-15 the net cropped area declined from 97,328 to 85,355 hectares (12.3 per cent).¹⁰⁵

EPILOGUE

British colonialism in the Western Ghats and along the west coast of south India constituted a major incursion into the lives of self-sustaining village communities who had hitherto enjoyed considerable autonomy as regards the management of common-property resources within their respective village territories. Throughout this hilly terrain kumri or shifting cultivation, was an established form of land use. In fact kumri amounted to agriculture and forestry being carried on together. At a time when agricultural technology for fragile, humid tropical hilly situations, prone to serious erosion of soil, rapid loss of fertility and invasion by weeds and pests, was not properly evolved, there was no viable alternative for kumri.

The case of Uttara Kannada shows that kumri was not a vagrant form of land use by uncivilized forest-dwellers as it was often construed by the British. In fact kumri was carried on by a society according to certain ethical land and resource use patterns, based on many generations of experience, which corresponded surprisingly closely to several prescriptions of modern ecological thinking. Such traditions included the conservation of substantial patches of primeval forests as sacred groves that also performed a variety of ecological and economical functions. Several fruit trees as well as trees with sacred values attributed to them were also protected. Among such sacred trees members of the genus *Ficus*, protected in India from time immemorial, are considered by modern ecologists as keystone resources of the tropical forests.¹⁰⁶ Kumri was associated with the maintenance of the landscape as a heterogeneous mosaic of habitats which enhanced biodiversity. Indeed hunting and gathering, subject to various community-based regulations, were also important modes of subsistence for the kumri people. From a commercial angle the enrichment of the wet evergreen forests, abounding in softwoods (which were in little demand during the nineteenth and early twentieth centuries), with marketable hardwoods, including teak, was an important contribution made by kumri cultivators through the ages. Though such timbers formed the main basis for British commercial forestry, particularly in Malabar and Uttara Kannada, no acknowledgement whatsoever was made to the kumri cultivators. Not only that,

but British foresters tried to achieve the same feat through extensive clearance of natural forests and monoculturing with teak.

Kumri was not really a vagrant form of cultivation involving enormous destruction of timber resources. Instead it amounted to a sophisticated combination of cultivation and conservation. The remains of sacred groves which still enshrine in them considerable biodiversity are believed to be a legacy left behind by kumri cultivators of the Western Ghats.¹⁰⁷ These farmers deserve a prime place in the annals of conservation. They were, on the contrary, not only denied any such honour, but described as uncivilized and barbaric. Indeed what followed the 'stamping out of kumri' was the vigorous pursuit of a forest policy which, its claims to be scientific notwithstanding, was typified by technical, ideological and political conflict. The policy generally reflected a poor grasp of the intricacies of human livelihoods, culture and ecology in the tropical forests of the Western Ghats. It also resulted in the sequential and opportunistic exploitation of forest resources after demolishing almost all forms of community management. The policy was designed to serve the cause of empire. It resulted in substantial material and social deprivation, loss of life and deprivation of agricultural property in Uttara Kannada and also created many ecological dislocations. Moreover for the first time it developed a major change in the outlook of the peasants towards forests, stimulating bitter hostility and confrontational attitudes towards foresters and forests in a broad sense. The price being paid today for this change in attitude is indeed a high one.

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21. Kumri finds mention in various forest settlement reports and working plans for the forests, particularly of Uttara Kannada. In the latter forest regrowth on kumri fallows is often mentioned.
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45. B.S. Ward and P.E. Connor, *Geographical and Statistical Memoir of the Survey of the Travancore and Cochin States (Travancore, 1863)*, 1863, 205-6; quoted by R.P. Tucker, 'The Depletion of India's Forests under British Imperialism: Planters, Foresters and Peasants in Assam and Kerala', in D. Worster (ed.), *The Ends of the Earth: Perspectives on Modern Environmental History*, Cambridge, 1988.
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47. W.E. Copleston, *The Bombay Forests*, Bombay, 1925.
48. G.O., 1899 of 1891, Government of Bombay, Rev. Dept Report, Maharashtra State Archives, Bombay (hereafter MSA).
49. *Working Plan for the Sandal Bearing Areas of Sirsi and Siddapur*, Madras, 1951.
50. Fryer's and Ovington's observations on the wildlife of Uttara Kannada are found in Campbell, *Gazetteer of the Bombay Presidency*, vol. 15, Kanara.
51. Ibid.
52. Horsley, *Forest Settlement of the Ankola Peta*.
53. P.E. Aitchison, *Working Plan for Honavar Talipalm Forests*, Bangalore, 1907.

54. Yennemadi, *Assignment of Forest Lands to the Hill Tribes of Supa Mahal*.
55. A. Crosby, *Ecological Imperialism: The Biological Expansion of Europe*, Cambridge, 1986.
56. Cleghorn, *Forests and Gardens*, ix.
57. Ibid. Correspondence on kumri cultivation.
58. Government Resolution no. 9145, dated 22 December 1890 stopping kumri everywhere in Uttara Kannada except in limited villages, in Cleghorn, *Forests and Gardens*.
59. Cleghorn, Correspondence on kumri cultivation, in *Forests and Gardens*.
60. Horsley, *Forest Settlement of the Ankola Peta*.
61. B.J. Haselden, DFO, Central Division of Kanara made these remarks in his letter of 16 February 1891 to the Conserv. of Forests, Southern Circle, For. Dept Files, 1891, Karnataka State Archives, Bangalore (hereafter KSA).
62. J.L. MacGregor, Conserv. of Forests, Southern Circle made these remarks in his letter to the Coll. of Kanara, 4 March 1891, For. Dept Files, 1891, KSA.
63. Buchanan, *Journal*.
64. For instance R.T. Wingate, the Forest Settlement Officer for Kanara described the kans as 'evergreens situated as they often are in detached blocks from the rest of the forests, are of great economic and climatic importance'. See Letter no. 210 dated 18 December 1888 to the Coll. of Kanara, For. Dept Files, 1891, KSA.
65. Government of Bombay, *Revenue Department Resolution*, no. 7211.
66. Yennemadi, *Assignment of Forest Lands to the Hill Tribes of Supa Mahal*.
67. Gadgil and Vartak, 'Sacred Groves of India', see also M. Gadgil and V.D. Vartak, 'Sacred Groves of Western Ghats of India', *Economic Botany*, 30 (1976), 152-60; M. Gadgil and V.D. Vartak, 'Sacred Groves of Maharashtra: An Inventory', in S.K. Jain (ed.), *Glimpses of Ethnobotany*, Bombay, 1981, 279-94; and Subash Chandran and Gadgil, 'Kans'.
68. In this area of 25 square kilometres even today, in spite of their attenuated form, there exist fifty-four sacred groves. Six per cent would have been under sacred groves according to historical land use based on landscape names.
69. There was sharing of resources between the various endogamous caste groups promoting sustainable utilization. See M. Gadgil and P. Iyer, 'On the Diversification of Common Property Resource Use by the Indian Society', in F. Berkes (ed.), *Common Property Resources: Ecology and Community Based Sustainable Development*, London, 1989.
70. Buchanan, *Journal*.
71. 'There are in Kumta and Honavar many small isolated pieces of forest with tree-growth near the sea than there are in Bhatkal. . . Many of these are already specially protected by the villagers'. G.F.S. Collins, 'On the Disposal of Minor Forest Near the Coastal Tract of Honavar, Kumta and Ankola Taluks', Forest Department Settlement Report, VI-71 to the Coll. of Kanara, unpublished, 1922, For. Dept Files, KSA.

72. The village forest of Halkar is under the formalized management of the Village Forest Panchayat Committee
73. See Gadgil and Iyer, 'On the Diversification of Common Property Resource Use'.
74. Cleghorn, *Forests and Gardens*
75. P.H. Daniel, *Rea Tea*, Madras, 1969.
76. M. Gadgil, 'Deforestation: Problems and Prospects', Supplement to *Wasteland News*, 4 4 (May-July 1989), New Delhi, 1989.
77. Hugh Tinker, *A New System of Slavery The Export of Indian Labour Overseas, 1830-1920*, New York, 1974. Tucker, 'The Depletion of India's Forests under British Imperialism'.
78. Tucker, 'The Depletion of India's Forests under British Imperialism'.
79. Gadgil and Iyer, 'On the Diversification of Common Property Resource Use'
80. Subash Chandran and Gadgil, 'Kans'
81. Government of Bombay, *Revenue Department Resolution*, no. 7211.
82. R.T. Wingate, Letter no. 199 of 1889-90, dated 8 October 1889 to the Coll. of Kanara, For Dept Files, KSA
83. Cleghorn, *Forests and Gardens*, gives a graphic picture of the rapid exhaustion of south Indian forests due to overexploitation for railways and various other needs of the state.
84. R. Guha, 'Forestry in British India and post-British India: A Historical Analysis', *Economic and Political Weekly*, 18, 44, 45 and 46 (1988).
85. For Gilbert teak plantations in Uttara Kannada, see Cleghorn, *Forests and Gardens*
86. R. Brito, *Forest Working Plan for the Karwar Fuel Reserves*, Bangalore, 1960.
87. Gregarious occurrence of *Xylia xylocarpa* on old kumri grounds was taken as the forerunner of the evergreen forest. See R.S. Pearson, *Working Plan Report for Ankola High Forest Blocks XXIV & XXV*, Bombay, 1908.
88. M. Gadgil and M.D. Subash Chandran, 'Environmental Impact of Forest Based Industries on the Evergreen Forests of Uttara Kannada District: A Case Study, Final Report', Department of Ecology and Environment of the Government of Karnataka, 1988. This report gives a detailed account of the forest history and commercial working of Uttara Kannada forests.
89. W.E. Copleston, *Working Plan for Arabail Slopes Block XII*, Bombay, 1901
90. Gadgil and Subash Chandran, 'On the History of Uttara Kannada Forests'
91. Ibid.; also Subash Chandran and Gadgil, 'State Forestry and the Decline of Food Resources'
92. See Pandian, this volume, for a much more detailed debate about the exclusion of Indians from hunting.
93. Campbell, *Gazetteer of the Bombay Presidency*, vol. 15, pts 1 and 2, Kanara.
94. Ibid. For a graphic picture of wanton hunting, G. Watt, *A Dictionary of the Economic Products of India*, vol. 3, New Delhi, 1972 (for sale in deer skins).

95. Ibid.
96. The excerpts from a memorandum submitted to the Minister of Revenue, Forest and Agriculture, Government of Bombay by B.M. Basrur and G.R. Masur around 1935 (date yet to be ascertained), Basrur and Masur personal file.
97. Forest Administrative Report of Kanara, 1917-18, For Dept Files, 1918, KSA.
98. Copleston, *The Bombay Forests*
99. Subash Chandran and Gadgil, 'State Forestry and the Decline of Food Resources'; Masur and Basrur personal file.
100. R.T. Wingate, *Proposals for the Forest Settlement of 45 Villages of Kumta Taluk*, no. 294 of 1890-1, Forest Settlement Office, Karwar, 1891
101. Yennemadi, *Assignment of Forest Tracts to the Hill Tribes of Supa Mahal*.
102. G.F.S. Collins, *Report on the General Conditions of Forest Administration in Siddapur Taluk*, no. F O R. VI-63, dated 15 June 1922, Forest Settlement Office, Karwar, 1922.
103. G.F.S. Collins on the situation in Uttara Kannada, Information based on Basrur and Masur file.
104. Basrur and Masur prepared this table on the decline of population based on various census reports.
105. Basrur and Masur file
106. J. Terebogh, 'Keystone Plant Resources'
107. Subash Chandran and Gadgil, 'Kans'.