KFRI Occasional Papers 002

Ideals and Disenchantments of Scientific Forestry in Colonial Tiruvitamkur

Amruth M.

Forestry and Human Dimensions Programme Division Kerala Forest Research Institute, Peechi

October 2012

KFRI Occasional Papers can be downloaded from KFRI Website (http://kfri.res.in/)

Ideals and Disenchantments of Scientific Forestry in Colonial Tiruvitamkur Amruth M.

Forestry and Human Dimensions Programme Division Kerala Forest Research Institute, Peechi, Thrissur 680653, Kerala, INDIA amrutham@gmail.com

Abstract

This paper narrates key episodes in the institution of science of forestry in Tiruvitamkur, a princely state in British India from 1850s to 1940s. The process is looked upon as a process of providing new vocabulary and conceptual tools for thinking and acting on the forests. In this new scheme forests of Tiruvitamkur were envisioned as an exhaustible resource which needed improvement by adopting specific scientifically informed measures. Extraction of timber was the overarching concern and continuous or sustained production of it was set as the measure of 'success' of forest conservation. The rationale and modalities of achieving this end required institutionalisation of practices in compliance with Maximum Sustained Yield Principle championed in the discipline of continental forestry. Means of institutionalisation of this principle required enunciation of legislations and policies, creation of a legible Forest Estate, enumeration of trees, assessment of growing stock and strict adherence to the forest working plans. These thinking and imaginations were derived of the larger colonial discourses of progress and improvement; a precursor to the modern temporality of development thinking.

Reservation of forest for the use of government was the first step in the normalisation of the forest. This was followed by making forests amenable to measurement and calculation through survey and demarcation of the reserved forests. Preparation of working plans by estimation of timber value, annual increment of timber volume and phasing of timber extraction in the welldemarcated forest space formed the subsequent strategy for making forest legible. This paper demonstrates that the desire for creation of the legible forest estate was never achieved fully. The system of preparing working plan itself had to be compromised as simplified working schemes prepared with subjective judgements was considered apt after trial working.

Some of these local factors such as need for cultivable land challenged forestry ideals. This upset the inviolable also prescriptions of the forester and honey combed the forest estate with forest lands "disafforested" and opened up for cultivation. Though the forestry ideals were imported from France and Germany they were mediated through the British Imperial processes and local situations. The forestry as it was practiced in the late colonial phase had local and European elements suffused in it. The knowledge developed for sustained wood extraction from non-tropical forests could not capture the complexity involved in the tropical forests. This does not mean that colonial forestry was a total failure though some of the most celebrated ideals of the continental forestry were proved impractical in Tiruvitamkur. Like the flawed ideal of the trigonometrical survey, the colonial forestry created a myth of the forests as knowable and legible and amenable entity to the particular modes of manipulative interventions preached by its proponents.

Keywords: Colonial Forestry, Sustained Yield Forestry, Travancore, Tiruvitamkur, Environmental History

Author gratefully acknowledges critical comments from Dr. S Raju, School of Social Sciences, Mahatma Gandhi University on an earlier draft of this paper. Usual disclaimers apply.

Ideals and Disenchantments of Scientific Forestry in Colonial Tiruvitamkur

"The instrument, the knife, that carved out the new, rudimentary forest was the razor-sharp interest in the production of a single commodity....Having come to see the forest as a commodity, scientific forestry set about refashioning it as a commodity machine. Utilitarian simplification in the forest was an effective way of maximizing wood production in the short and intermediate term. Ultimately, however, its emphasis on yield and paper profits, its relatively short time horizon, and, above all, the vast array of consequences it had resolutely bracketed came back to haunt it."

James C. Scott (1998) Seeing Like a State

A narration of the efforts made for creating a government-'forest estate' in Tiruvitamkur is presented in this essay. The period covered is from 1850s to 1940s. These governmental efforts were made for 'conserving' forests for production and consumption of timber resources and were informed by idioms and vocabulary drawn from the conceptual armoury of an emergent science of Continental Forestry. As a result conversations on forests in the state were permeated with a new vocabulary and grammatology of forestry science in which nature/forests figured as a resource in a larger state programme for enhanced production and productivity for attaining 'improvement' and 'progress' of nation. Thus these episodes in introduction of Continental Forestry ideals under the Colonial Conditions could be re-read as

5

inauguration of a novel programme of governing the nature. However, translation of these scientific ideals into local practice was fraught with problems, incompatibilities and disenchantments.

Historical Antecedents of Forest Reservation in Colonial Tiruvutamkur

Idioms and vocabulary of Continental Forestry achieved circulation in India under specific historical context.¹ A significant factor is colonialism and the then emergent discourse of 'progress' and 'improvement' under the conditions of colonialism. Before embarking on a discussion on the practice of forestry and institution of a government forest estate by means of reservation of forests, it is necessary to understand this context in detail.

European and Arabian trade at the South-Western Coast of India from sixteenth to eighteenth centuries were predominantly in spices and condiments, most of which were procured from the forested inlands.² So forests of Tiruvitamkur were linked to the world system of trade for centuries. But, there was no systematic scheme envisaged for improvement of forests prior to second half of 19 century. The consistency and volume of trade in historical accounts suggest that there existed collection and supply

¹ See Sangwan, S. (1999: 187-237), Gadgil, M., & Guha, R. (1992) and Guha R. (1989) for importance of colonial context as a juncture were modern knowledge achieved circulation and institutionalisation. Here the stress is on understanding how the modern ideas were permeated in the colonial conditions and the way these ideas were mediated in these conditions to create distinct modernity.

² Major items of trade included: pepper, ginger, coir, cinnamon, sealing wax, clove, cardamom, myrobalan, indigo, tamarind, Myrrh, zerumbet, camphor, cubebs, nutmeg, sandal, zedoary etc.

networks and merchant guilds developed due to trade.³ By late 17th century, European traders began to exert considerable political influence on the local rulers with regards to the monopolistic trade rights on pepper and other merchandise. The goods thus collected served as capital for inland trade also. Towards the end of 17th century and early decades of the 18th century, the trade centres were began to be dominated by the foreign trading companies. However, their gaze had not fallen on the forestland from where most of the spices originated to flow to these centres. Gradually, centralised political power was extended to the whole of the territory, especially following the entry of chartered trading companies of England and France, and it culminating in Colonial domination by the end of 18th century.⁴

Earlier studies have pointed out that from 1792 there was an important shift in sources of the capital which financed the Colonial activities in Tiruvitamkur (as elsewhere in the south-western coast).⁵ Because of this, role of trade surplus in financing the Colonial project was made insignificant by the land revenue. This shift in policy had long-lasting impacts as it refashioned the Land Revenue Administration and transformed the way forests were utilised. This shift was coterminous with annexation of Malabar and incorporation of the Princely States of Cochin and Tiruvitamkur to the territories of English East India Company.

³ Mathew (1999 : 180-221)

⁴ Roughly in the mid-18 century, one of the Kingdom - Venad - consolidated and extended command over the smaller principalities with the aid of English East India Company to form Tiruvitamkur.

⁵ Tharakan (1999: 360-401)

The two consecutive treaties with the Company, the first in 1795 and the second in 1805, left Tiruvitamkur with only a nominal autonomy in adopting the measures or reforms suggested by the Company. The provisions of the treaty of 1795 bound Tiruvitamkur to closely adhere to the 'advices as the English Government shall occasionally judge it necessary to offer' on matters relating to state finances, collection of revenue, administration of justice, extension of commerce, encouragement of trade, agriculture and industry.⁶ Of course, British paramountcy had deemed itself fit to make advices in most matters. The second treaty of 1805 revised tributes, raising it almost ten times more than that of the previous.⁷ The period that followed the second treaty witnessed the uprising of 1808 in Tiruvitamkur⁸ and subsequently Col. John Munroe assuming the offices of Dewan and Resident.⁹ This situation was especially conducive for British to wield power in all the matters of the State. The Resident virtually assumed the power of throne on grounds of the fragile political situation in the State. Therefore the period of Col. Munroe as British Resident of the State saw a radical restructuring of the general administration of the state. Reforms were guided with a conscious effort for emulating similar systems of administration prevalent in the Madras Presidency and

⁶ Aitchison (1983) quoted in Rammohan (1996: 13)

⁷ Enhanced from Rs. 78,000 to more than Rs. 8,00,000 (Varghese 1970, quoted in Chundamannil 1993: 13)

⁸ Revolt of 1808 was lead by Dewan Velu Thambi Dalawa.

⁹ Resident was the diplomatic representative of the British Paramaountcy in Princely States. Col. John Munroe was the Resident of the Tiruvitamkur from 1810 to 1819. His assuming of the office of the Dewan and Resident made him powerful enough to effect large scale revenue reform of significant social and economic consequences in the region.

other british territories.¹⁰ Among the subsequent reformations and reorganisations of the revenue administration in the state the foundational shift was the one during Munroe's period (1811-15).

The revenue administration, therefore, became the most influential and authoritative apparatus of the state. The tributes and the land revenue became the most important source of income in Tiruvitamkur as elsewhere in British India.¹¹ This dependence on the land revenue meant drawing the State policies towards the land revenue settlements as a measure of intensification of agriculture based production.¹² Following the transfer of territories to the British Crown in late 1850s extension of the land put to 'productive' purposes received a new impetus.

Focus on Timber

Early Colonial interests on the forests were on spices and timber. It is well known that the affairs of forests were keenly observed and controlled by the British paramountcy as the fine timbers for various purposes, especially teak for the Royal Navy's seafaring vessels, had assumed strategic

¹⁰ These reforms had further implications of weakening of the existing upper-caste dominated power structure in State. For a detailed treatment of the impact of the revolt of 1808, leading to a near total annexation of State by British, and subsequent reforms in the line of British-India, see Rammohan (1996: 11-17). The structure of the upper caste dominated state administration, including revenue and justice up to the lower rung at village level, was affected by the reforms.

¹¹ The new modes of land revenue system also had decisive influence on various social and production relations, especially, effecting a shift towards increasingly monetised economy, among almost all strata of society. (Ludden 1999: 170-72) For instance, during 1867-68, the revenue from the paddy land in Tiruvitamkur was Rs. 11,13,006, while the same from garden land Rs. 4,02,804, out of the total revenue Rs. 16,69,316 from land. This means that, the revenue due to paddy amounted to roughly 67 percent of total land revenue. The gross revenue from all sources were about 52 lacs (RAT 1867-68 : 32).

¹² Ludden (1999:159-70)

importance in the domination of maritime trade. There were inquiries on the availability of teak timber from the forests of the Malabar Coast right from the late 18th century.¹³ As early as in the late 18th century a timber depot was opened at Aleppey during the period of Dewan Raja Kesava Das.¹⁴ A post of Conservator was created in early 1800s to organise extraction and supply of the timber to the depots in Aleppey to be sold to the British-Indian dockyards for shipbuilding.¹⁵

The interest of the Tiruvitamkur government on the forests was mainly to maximize the revenue for which it was hard-pressed due to the payment of tributes to paramountcy. In early decades of the 19th century, the growing scarcity of fine timber in the forests, due to indiscriminate felling by private agencies, had already become a concern.¹⁶ As a result, more attention fell on the affairs of forests, especially on timber. The office of Conservator was among the first three British offices that were created in the State which in a way indicates the importance given to forests by the colonial power.¹⁷ Among the forest spices, cardamom was a state monopoly for nearly a century until late 19th century.

During the second decade of 19th century, almost half of the total land area (approximately 8754 sq. km. out of

¹³ Mann (2001: 9-26). By the end of the 18th century the British nearly replaced the Arabs as buyers of teak timber for their construction of the sea going vessels (Chundamannil 1993 : 12).

¹⁴ Chundamannil (1993. :12)

¹⁵ Chundamannil (1993:13)

¹⁶ Mann (2001)

¹⁷ The other two were, offices of political resident and the commercial agent (Rammohan 1996: 95).

the 16458 sq. km.) of the State was forested, while the area of forests in the metropolitan countries such as Britain was insignificantly small.¹⁸ However, during the same period (1820s), it was reported that teak at the most accessible parts of the river basins that were leased out to the private contractors for extraction of teak were exhausted of timber. Subsequently extraction of teak by private contractors was replaced by the direct operation by government agency under the supervision of a British officer.¹⁹ Initially the offices of the Conservator and Commercial Agent were held by a single officer. The original purpose of Commercial Agency was sale of *Sirkar* pepper alone. Later monopoly commodities such as cardamom, teak timber and other forest produces were also sold by the Commercial Agent. It also functioned '...as a trustworthy medium of supplying all valuable foreign articles of merchandize required for the use of Palace and State....'²⁰ The duties of the Conservator and Commercial Agent were separated in early 1820s. The first fulltime Conservator was a British, Urban Verres of Col.Munro, the British Resident at Munro, son Tiruvitamkur. The conservancy did not mean conservation in its presently used sense. Concern of the office of the conservator was confined to overseeing the supply and sale of the timber in the timber yard at the Aleppey.

Manpower was limited and the Department was manned by personnel who usually had no prior experience or expertise in forestry. Major activities of the Department were

¹⁸ According to Bourdillon, the average acreage of forest per 100 persons in Tiruvitamkur and United Kingdom was respectively 90 and 6 (Bourdillon 1993: 122).

¹⁹ Ward and Conner (1863 : 41)

²⁰ RAT (1874-75:56)

procuring of timber and hill produce for government Commercial Agent, levying of river duty on the timber transported, and issuance of regulations and proclamations for controlling hill cultivation and forest offences. Some proclamations for restricting the extraction of state monopoly produces were issued during the period. The Conservator's territories within the State were loosely defined either in terms of occurrences of the royal timber or in terms of the watch stations it maintained to check unauthorised transportation of timber through rivers.

Apart from the intensification of agriculture based production, there were also attempts for extending area under plantation crops. For instance, Tiruvitamkur responded to the demand for land by European planters favourably by fixing concessional rent and moderate taxes.²¹ State also incurred expenses of developing communication networks much necessary for increasing accessibility to hitherto unopened territories such as plantation zones in the hills. These policies favoured the intentions of European planters who were interested in growing subtropical cash crops in the higher altitudes; gradually resulting in the large-scale plantations in the High Ranges.²² In the wake of establishment of coffee plantations

²¹ Concessional land rent announced in this regard continued to be the same for both food and cash crops. Declining state income from conventional trade and restrictions on imports of rice were also been reasons for adopting measures for promoting paddy cultivation (Rammohan 2006 : 15-22).

²² As earlier in the late 19th and early 20th centuries augmenting the revenue flow continued to be the key motive behind most of the policies and proclamations announced in Tiruvitamkur pertaining to the utilisation of land, especially those intended to facilitate expansion of food and cash crop cultivation in the forested lands.

in the High Ranges by J.D. Munro, then Dewan of Tiruvitamkur observed that:

The Sircar feels satisfied that the country would largely benefit by the introduction of the capital, skill and, enterprise of European gentlemen in utilising tracts of valuable land, which for the most part would other wise be untouched for generations. It has accordingly been the anxious desire of the Sircar to afford facilities for planters... (RAT 1862-63: 13).

Extension of plantations meant alteration of forested lands. During the European / Arabian trade, the companies were never involved in production from land. Rather they confined their operation to the collection factors in costal area. Only after the British began to concentrate on the production based on land, the forestlands came under state surveillance. So the justification for existence of forests was understood through the new reason of land revenue and strategic importance of timbers. This meant a widening of interest from timber-stands to the *timber-land* and its productivity and an alteration of the definition of forests. This changed perception of what constitutes a forest was also fashioned by modern ways of knowing.

Domesticating Nature-Usefulness of Knowledge

As mentioned earlier, the locus of control on forests was on the produce during the early 19th century. This was operationalised through either by monopolisation in forest produce or by restriction in the transportation and trade of forests produce. Timber such as rosewood and *anjily* were declared as monopolies along with teak by 1844. Sandalwood and ebony were made so in 1865.²³ Similarly, a

²³ Chundamannil (1993 :12-13)

score of other forest produces such as wax, ivory and cardamom were also made state monopolies. There were stringent regulations on capturing and killing of wild elephants. Further, by 1873 itself two Assistant Conservators of the Department were posted at Malayattoor and Collacadavoo, as these locations were 'the principal stations to which the timber felled in the forests...[were] brought and sent out to various parts.'24 Though these aspects of control on timber and hill produces and their procurement and sale were often taken for the forest conservancy, the organized drive for 'improvement' of the forestlands on the basis of Forestry was to begin only in the post-1860s.²⁵ This change was coterminous with similar development of the tropical forestry and commercial plantation agriculture in other parts of the British-India.²⁶ In 1864, following statement appeared in the Report on the Administration of Tiruvitamkur:

...it is the belief of the Sirkar that the management of the forests is yet susceptible of much improvement. There are parts of forests where there is magnificent timber which ought to be, but which cannot be, brought down; first because there are no roads, and secondly, because Elephantpower, considered indispensable, is limited. The renovation of the forests which are being worked, is left entirely to natural processes....It is the intension of the Sirkar to arrange

²⁴ RAT (1872-74: 82)

²⁵ See Rammohan (1996: 95-106), According to him, there was a demand explosion for timber in the post 1860s which would have prompted State to make initiatives for improvement of forests.

²⁶ The British Indian Forest Department establishment had a formal beginning in 1864 with Dietrich Brandis as Inspector General of Forests (Chundamannil 1993: 20). The first version of Indian Forest Act was brought out in 1865, soon after the institution of the Forest Department. It was replaced by a more 'sophisticated' Act in 1878.

for the Conservator visiting some of the best worked forests of British India, with a view to see if any particular instruction is to be gained. (RAT 1864-65: 52)

Need for improving the forests, making the forest work more efficiently and improved timber productivity are well reflected in the above statement. Tiruvitamkur attempted to replicate British Indian system of forest administration. Timber extraction at the direct supervision of the government necessitated establishment of a network of labours, contractors and traders. Activities such as capture of elephants and their training proved to be an indispensable part of the scheme.

Forests of Mahendragiri which was managed by the Revenue Department were brought under the Conservator in 1882. This act was a response to the indiscriminate felling and consequent directive passed by Madras Presidency. In the pre-reservation period (i.e. prior to 1890s), such incidents of inclusion of forest tracts to the Forest Department's jurisdiction were frequent. Majority of the forest tracts in the State, excepting the land under the supervision of Superintendent of Cardamom and a small portion in the Southern Tiruvitamkur, came under the jurisdiction of the Conservator by then.²⁷

Another significant development in this era was a change in the land revenue policy that occurred around 1883. New policy levied tax on the fertility (productive potential) of agriculture land whereas in the old policy tax

²⁷ The Cardamom Hills was under the control of Conservator until 1869. It was thereafter transferred to Cardamom Department which started functioning in 1823. The forests in South Tiruvitamkur was under the direct control of the Revenue Department (RAT 1872-74: 82) also see Nair, Chundamannil and Muhammad (1984 : 53).

was levied on the actual quality of crop produced.²⁸ One of the consequences of adopting this criterion was the creation of newer productive categories of land that belonged to definite tax-tariff. The land is taxed on these tariff rates even if it was not cultivated. During 1880s, in an address to the land owners of Tiruvitamkur, Dewan explained the reason behind this reform as below:

It is true that only a portion of the land yields any return at present, and that the vacant portion even if planted at once, would take probably 7 or 8 years to come into bearing, but surely the unplanted portion can be and a matter of fact, turned to account in a hundred ways. The coconut plant does not interfere with the ground being cultivated, with anything the owner likes to grow. He can and does grow vegetables, plantains, arrowroot, yams and edible roots of all kinds. It can be no hardship to pay a trifle for land which can be put profitable account in so many ways. It is true that the owner pays little or nothing for such land now, but that is precisely why he does not care to work, why he is lazy and earns so little, and why his cultivation, such as it is, is so slovenly. The sooner the cultivators in Tiruvitamkur are made to see that if they take up land they are bound to pay for it, the better for them and the country in general. They will become much more useful and active members of the community than they are. (RAT 1882-83: cxxiii)

This was a manifestation of the State's aspirations for making its subjects more enterprising in the production of

²⁸ Reforms in the revenue administration that took place in the early 19th century under the zealous initiative of Col. Munroe as the British Resident involved annexation of the land and property owned by the temples. This brought to focus the land as a source of revenue. The assessment of tax was based on the actual produce from land. The new system of assessment all lands were classified based on the productivity classification and determining the possible maximum yield from cultivation of each of these categories of land.

wealth by making improvements on land.²⁹ The rationale behind the shift of attention from crops to fertility of land subsequently influenced the perception on all forms of land use. The changed treatment of forest as 'land', as opposed to the standing crop of timber, also justified the reservation of forests and charting out territories for 'improvement' of its 'value' with the aid of specific management inputs.³⁰ This was a criterion already followed in the British-Indian revenue settlements. But in Tiruvitamkur, the shift was coterminous with the shift in forest policy. The Forest Act, which came into effect in 1888, classified forests in terms of its productive potential of timber. Similarly, choice of plantation sites was also made by considering their productivity and land value. Therefore, these logics of reforms significantly recast the idea of what forests ought to be. From this historical background let us return to the forestry discourse under Colonial Conditions.

The political-economic rational inherent in forestry discourses were often bundled along with other legitimising discourses of colonialism and modernisation, progress and improvement. In a deeper sense, this rational of political economy formed the leading thread of practice. However, there were gaps between the rationale and practices. This rationality was different from the rationality of other competing discourses on desiccation and shifting

²⁹ See the Address by the Dewan of Tiruvitamkur to the Leading Landholders, on 24th March 1883 (RAT 1882-83: cvii-cxxv). Such policies had already been in practice in Madras Presidency. However, for us what is interesting is the change in the general logic in taxation and locus of control (RAT 1882-83: cxxiii).

³⁰ It may be noted that, in Tiruvitamkur, the policy of reservation of forests was followed on the basis of the report of the committee on improvement of forests -1884. However, both these policies were coterminous.

cultivation.³¹ Here I would like to argue that, although colonialism is about control of economy, the self-justification of it could be achieved only through the Orientalist discourse ³² where the Occident as represented as progressed and Orient as yet to be progressed or primitive. Therefore, when the notions of progress and primitive are invoked, they imply particular notions of altered ways of production to which society should be reordered; only then did the economic end is ensured. In a way, this provided new measures and standards of civility, progress and institutions of calculative procedure and legibility were introduced.

Forest Acts and Institutional Practices

Institutions were reconstituted to an amenable modular form for enabling 'legibility' of vast forested territories; i. e for bringing these lands and activities to the cognizance of the state. This process involved flow information and mediations, for instance the desired degree of legibility to the landscapes and forests were achieved by hybridising Eurocentric/modern knowledge with the indigenous knowledge of terrain and culture.³³ This new amalgam of knowledge constituted new objects of practice; created diverse new regulatory strategies; mechanisms, technologies, institutions, policies, language

³¹ See Grove (1994) for a scholarly treatment on colonial Desiccation Discourses.

³² See Said (1978)

³³ See Scott (1998) for the specific meaning in which the word 'legibility' is used here and also for an excellent exposition of the hybridization of knowledge through local mediation.

regimes and calculations. This enabled strategies of control and action from distance and proximity.³⁴

Achieving such controls required an appraisal of forest governance existent in the state and identifying its defects for improved conservancy. The idea of sustained yield, already in circulation, demanded which was the quantification of available resources over space and time. It was found that what is equally important is phasing and planning of extraction; where, techniques of Continental Forestry came handy. However, existence of suitable administrative machinery, legal provisions and welldemarcated forest territory, which are the prerequisites for introducing Sustained Yield Principles, were lacking in the State. Moreover, by early 1880s, it was being strongly felt that the forest had much room for improvement, provided the Department is reconstituted to suit the changed times.³⁵ Timber prices had escalated so much that the existent rates of seigniorage were redundant. Besides, valuable forests were being destroyed due to 'kumari or hill cultivation and by fires which in the absence of legislation could not have checked'.³⁶

As a consequence, in 1884, a Joint Committee on Administration of Tiruvitamkur Forests, consisting of senior officers of forest, revenue and other departments, was constituted to look into the matters of forest administration and report on its defects. In the joint Report, the

³⁴ 'Action at a Distance', See Latour (1987) cited in Miller and Rose (1993: 76).

³⁵ RAT (1882-83 : 53). Also see Rammohan (1996: 96-97), where it was demonstrated that there was a demand-explosion for timber around 1860s..."The quantity of teak exports from Tiruvitamkur doubled between 1882 and 1892. Between 1860 and 1900, the value of timber of all kinds exported expanded by more than seven-fold...."

³⁶ RAT (1882-83: 53)

Committee expressed their conviction that there existed an urgent need for a revision of the system of administration of forests in the State. Assistant Conservator, T.F. Bourdillon, was assigned the duty of preparing a detailed report on the modalities of effecting these changes. The Committee also made proposals for reserving forests and for making an similar to that of Madras Forest Act. enactment draft regulation Subsequently, was а prepared. Tiruvitamkur promulgated the first Forest Regulation in 1888 for 'want of a comprehensive legislative enactment for the proper protection' of forests.³⁷ The Act was prepared in the mould of Madras Forest Act (1882) which was in turn a modified version of Indian Forest Act brought out in 1878. Indian Forest Act had provisions for forming two kinds of forests the 'reserved forests' and 'protected forests'. In case of reserved forest, the right to use it was exclusively vested with the government, boundaries of which were clearly demarcated and others could use it only with the permission of government. Whereas the protected forests were those Government forests that were not yet been surveyed but temporarily been open to limited private use. Madras Government declined to implement the Indian Forest Act of 1878 as the rights of the villagers over the forests were such as to prevent the formation of exclusive State Reserves. Madras Forest Act also was framed in the same general lines as the Indian Forest Act. However, the procedures relating to the constitution of

³⁷ RAT (1890-91:113)

reserved forests were made more people-friendly and simple.³⁸

The Tiruvitamkur regulation of 1888 was revised and expanded in 1893 with provisions for asserting state rights over the monopoly forest produces. The regulation of 1888 concerned only with the reservation forests; this was retained in the 1893 regulation more or less completely.³⁹ The Government was aware of the controversies such bills and regulations created in other British-Indian Provinces.⁴⁰ Finally, the forest regulation was passed in Tiruvitamkur and it prohibited most activities that had been practiced by laymen in the forests.⁴¹ The final version of Tiruvitamkur Forest Regulation was formulated in close compliance with the similar acts of Madras and British-India. The Forest Rules along with the forest regulation provided a detailed framework for translating the ideals of the Continental Forestry into practice. The legal framework formed the crucial invention and contrivance which empowered the foresters to assert the rightness of their specialised knowledge.

³⁸ The Indian Forest Act was passed in 1878; the Madras Forest Act was delayed by four years because of the strong disagreement prevailed among the cadres of foresters in the Presidency on annexing forests as intended in Indian Forest Act. Majority of the foresters in the Madras Presidency were sympathetic to the needs of villagers. Resultantly the Madras Act was more liberal than the Indian Forest Act. I have not ventured a comparison of the provisions of the Acts of Madras and Tiruvitamkur, but it is glaringly evident that the provisions such as village forest is lacking in the Tiruvitamkur Act.

³⁹ TFM (1917: 1-2)

⁴⁰ As introduction to bill, T.Rajaram Rao provided a detailed introduction for the Act. In the very beginning of the introduction he stated that "While the working of Forest laws is causing much heart-burning and complaint in British India, the introduction of a Bill passing a law on the same subject in this country requires special explanation....". (TFM 1917: 1)

⁴¹ TFM (1917: 13-17)

To suit the operationalisation of the new legal instruments, the Forest Department was completely reorganised by the turn of 20th century by dividing the territory under its jurisdiction into Divisions and Ranges on the lines of the British Forest Administration. As in the case of other Acts and policies, in this instance also Tiruvitamkur replicated British-Indian administrative courses, of course with a time lag in comparison to Bengal and Madras. The objective of passing forest regulation was to consolidate all activities to a forest territory that was exclusively owned by the state. This was made possible by extinguishment of the private rights once and for all; this process was called 'forest settlement'; where, the word 'settlement' stands for settlement of private rights. State owned Forest Estate was a requirement for practicing the Continental Forestry that was originally constituted as one of the cameral sciences in the 18 and 19 century Germany and France.⁴²

The condition that made such reforms necessary is reflected in a retrospective statement made in the year 1930s by the official historian.

No rules were issued for the guidance of the department; no forest demarcation was done; no survey was carried out; no fire-protection was attempted; no roads and bridle-paths were opened in the forests; and no rest-houses or camping sheds were constructed to facilitate inspection. The unsystematic felling and removal of timber was another grave menace to forest growth. No process of extraction under any working plan was contemplated, while smuggling was rampant, and the insufficiency and inefficiency of the small illiterate, irresponsible preventive staff employed to combat

⁴² Rajan (1998) provides a detailed account of the origins, nature and ideas of Continental Forestry.

the evil was all but notorious. Nor was the complicated, unreliable and unmethodical manner of keeping accounts in the departments calculated to enhance its prestige. (Iyer 1998: 321)

The need of the time was a departure from this chaos. What is aimed at was institutionalisation and modernisation of forest governance.

Bourdillon's Report on the Forests of Tiruvitamkur

As shown in the previous sections by the last decades of the 19th century (1880s and 1890s), a definite shift in the forest management had taken place. A series of fresh appointments were made in the upper cadres of the Forest Department in Tiruvitamkur. In 1889, TF Bourdillon succeeded Vernede who was Conservator for nearly 27 years. Bourdillon's Report on the forests of Tiruvitamkur was significant in the wake of new Forest Regulation and complementary proposals made by him for reorganisation Department modelling it after the Forest the of Departments of the British-India. The Forest Regulation and Bourdillon's Report can well be read together as representing the new forest policy of Tiruvitamkur in late 19th century.

Bourdillon's Report on the forests of Tiruvitamkur was submitted in 1892 and was published in 1893. The proposals made in the Report, the Forest Regulation, and Bourdillon on the lead as Conservator, heralded an era of reforms in utilisation of forests in Tiruvitamkur. The Report was a definite statement on the role of forests in the State's economy as perceived and influenced by the emerging School of Tropical Forestry. This School was developing in tune with the rationalities of Colonial Governance and was informed by the notion that forest is a production space capable of catering to imperial interests. Bourdillon's Report is replete with terminologies, conceptual categories and rhetorical strategies of Colonial discourse on 'progress' and 'improvement'.

Following a detailed review of the existing system of management and description of the forest tracts, Bourdillon made elaborate proposals for the future course of management of forests in the State. Constitution of a state forest territory - the Forest Estate - by means of reservation of forests, and improvement of forests by regeneration and establishment of plantations, apart from an informed administration, were the key achieving by Bourdillon. Tiruvitamkur Forest proposals made Regulation and its consecutive amendments were mainly for providing legal backing for the envisaged plan of largescale forest annexation by the state. The rationale of Reservation was in resonance with the established norms of 'sustained yield forestry'. According to Bourdillon, objective of Reservation was:

"...not merely to prevent the destruction of the forests by hillcultivators, though this is very necessary. The forests can never improve so long as the timber in them is felled at random and without any system, weather by Government or by holders of permits, and the objects of working plans is to arrange that timber should be felled over a certain area each year or couple of years, while the rest of the forests is left undisturbed till the time comes round for the trees in each portion of it to be cut down" (Bourdillon 1893:168).

Reservation formed the first step in the revision in forest governance. These alterations meant adoption of a

series of measures such as demarcation of boundaries, implementation of working plans, controlled extraction of timber and control of hill-cultivation etc.

Modalities of Governance for 'Improvement'

Bourdillon's convictions were complementary to the ideas prevailed in the tropical forestry and he trusted in the ability of the science of forestry to recast forests. He maintained that '...forests have their uses and cannot be dispensed with'.⁴³ His identification of uses of forests included, its function in climatic regulation and economy of the country. These rationales of treating nature as potential and present resources, when harnessed scientifically, prompted him to make calculations as to how much forest is necessary for meeting the needs of an *advancing civilisation*. While deciding the extent of forests to be reserved, he observed that it was necessary to consider the needs of the population:

"If they are backward in the scale of civilisation, all that they need may be enough fuel to cook their food, and sufficient wood to make their bows and arrows and spear handles. On the other hand, they may require, as in America, a large quantity of timber per head per annum....[W]e have to consider ...the possible needs of a constantly increasing population, accumulating wealth, and advancing in civilisation." (Bourdillon 1893:202)

Having decided on the total extent to be reserved as 3885 sq. km. for meeting the present and future needs of the country, Bourdillon declared that '...no money should be spend on the area excluded. Not only would we object to the clearing of this land, but we would in every way

⁴³ Bourdillon (1893:197)

approve of it, as this would tend to make the country more healthy and accessible.'⁴⁴ These ideas of utilitarian instrumentality and improvement of forests through rationalised procedures have informed all his subsequent recommendations for the future organisation of the Forest Department and its activities in the State.

Taking Cognizance: Creation of a Legible Forest Territory

Intention to reserve forest tracts in the State was expressed as early as 1874 in a government notification in of allotting forestlands for commercial the wake cultivation.⁴⁵ However, reservation of forests as part of 'improvement' was for creating a depopulated government 'Forest Estate'. This estate was to be carefully demarcated into blocks, and the trees in it enumerated for the available standing timber for phased extraction. Bourdillon observed that, 'It is not sufficient to exclude the hillmen and those who live by shifting cultivation....but we want something more than this... that all portions of the forests should be equally worked...the forest must be divided into blocks each of which must be made to yield its produce in turn while the others closed to all work'.⁴⁶ The extraction was to be followed by adopting measures for regenerating valuable timber species. Operations in the reserved forests had to be supplemented by raising monocrop plantations of valuable

⁴⁴ Bourdillon (1893: 212), this was not an exceptional idea but an educated opinion that could possibly be uttered by a statesmen under the Colonial Conditions. For instance, while commenting on the timber scarcity due to decline in oak forests, Dr. Thomas Preston stated that reduction of oak trees was not "to be regretted for it is a certain proof of national improvement" (Sangwan 1999: 189).

⁴⁵ See Notice dated 15 November 1874 appeared in the Tiruvitamkur Almanac (*TA*1876:168).

⁴⁶ Bourdillon (1893: 205)

species on more productive lands in the lower altitudes. This was a regular programme with fixed annual targets for plantation extension. The whole process was to be carried out under strict supervision of a cadre of able and trained forest staff. Such supervision and surveillance necessitated a radical reorganisation of the Department. This involved creation of a trained cadre of foresters, development of networks, camping new communication facilities. surveying, mapping and planning of the timber extraction and setting up of a system of timber marketing. These measures were to achieve a concentration of activities of the Department and increase the surveillance with optimal number of staff.

To Bourdillon forest was reducible to trees on which axe can be applied to gain timber. That is how the forest began to be imagined as waiting for Man's use in the present and future. Forest reduced as timber was seen through the lenses of both the use and exchange values. Bourdillon's strategies for effecting 'improvement' of forests can be understood as falling under two categories of forestry activities; raising plantations of timber species and controlled felling of natural forests. To Bourdillon both these activities were to be preceded by creation of a well demarcated Forest Estate through declaration of reserved forests.⁴⁷ Reserve Forests were thus to serve two different functions; economic and protective. 'Protection forests' were those which are on the steeper slopes or on the headwaters of the streams where the forest growth is necessary for ensuring stability of slope and regulation of flow of water. Economic function included, mainly,

⁴⁷ Baden-Powell (1893: 1-16)

supplying timber for meeting internal as well as external demands, thus earning revenue to the State exchequer. Apart from timber, there was need for meeting the demand for fuel wood, so recommendations for beginning fuel wood plantations were also made.

Deciding on the modalities of improving the production of timber from mixed forest was a major challenge. After reviewing the advantages and disadvantages of 'French natural system' of forestry and 'system of phased clearfelling' of forest blocks, a rationalised system of selective felling or Jardinage was recommend for the forests of Tiruvitamkur. The system of Jardinage was aimed at producing a regularised forest enriched with the stock of valuable timber species, by selectively removing the mature ones in a phased manner across the blocks identified and demarcated in advance. The process was based on the sustained yield principle by 'restricting the annual fellings to what the forests can yield without deterioration' and also by 'distributing the fellings equally over forests'. The planning of the forestry operations for the 'sustained yield' necessitated preparation of Working Plans on the basis of careful enumeration of the standing timber, estimation of growth rates based on actual ground survey and extrapolation using allometric functions.⁴⁸

⁴⁸ The format of a Working Plan necessarily included an estimate of the number of trees that are expected to enter the exploitable girth class in each felling cycle. In a more sophisticated form, it included the volume of timber extractable calculated on the basis of growth increments and limits of extractions based on the Sustained Yield Principle. The felling cycles were also prescribed by deciding on the long-term rotational yield besides making short-term prescriptions for treatment of the forest stands. The Sustained Yield Principle is seen as a rational, combining the maximization of the conflicting objectives of forest management such as timber and non-timber services; i.e. maximization of the yield while maintaining the permanent usefulness of the forests.

Working Plan thus became the new management diagram for implementing concepts of 'maximum sustained yield', which reached in India through German foresters.⁴⁹ The treatise of DÁrcy on the form and formalities of preparing Working Plans published in 1898 provided a standardized model for it.⁵⁰ Working Plans were considered as professional and objective judgments of the 'scientifically' trained foresters. They were considered as inviolable prescriptions for forest governance.⁵¹

Even during the heydays of Sustained Yield Forestry, the Forest Department of Tiruvitamkur did not have complete control over the forested tracts within the State territory. A large area comprising Cardamom Hill reserve and the Kannan Devan Concession lands were under the direct supervision of the Cardamom Superintendent until its final dissolution in 1910.⁵² By the turn of the 20th century, a number of Working Schemes on rotation of six years were already being used as guidelines for localized felling in compact areas. The official historian noted that

⁴⁹ Sivaramakrishnan (1995: 17) Bourdillon's usage of the concepts no doubt is in the same sense. He was referring to the Articles appeared in the Indian Forester, a journal which was the bandwagon of Sustained Yield Forestry. Although the preparation of working plan was attempted as early as 1837 in Tiruvitamkur, by the then Conservator U V Munro (Chundamannil 1993: 21), in the absence of surveys and enumeration of timber stock, it was not in compliance with the sustained yield concept. A more precise attempt to plan timber working took place much later. But legacy of preparation of working plans existed as early as 1860s in other parts of British-India, (Chundamannil, 1993: 22). See Sangwan (1999 :189-191) and Saldanha (1996: 195-219) for the import of the German legacy in forest management in India.

⁵⁰ D'Arcy (1898)

⁵¹ However the World Wars saw indiscriminate felling by violating these prescriptions due to escalated timber demands.

⁵² Government Order No.176/L.R., dated 15-1-1910. see *TAR* (1909-10: 9). TLRM Vol. II. (1915:684-85)

these schemes '...did not visualize a regulated system or take into account the demands of scientific sylviculture.'⁵³

Marking a Forest Territory

Survey and demarcation of the forest tracts were integral to the planned forest management or normalisation of forests; besides they were prerequisite for creation of Forest Estate and Working Plans.⁵⁴ While penning the plan of action for Tiruvitamkur forests, Bourdillon foresaw that a 'considerable amount of work in the way of surveying will have to be done.' Survey and demarcation of precise boundaries were not customary in the initial phase. Towards the 20th century, when the survey and settlement work had sufficiently progressed and institutionalised, it became customary to conduct survey before the land is allocated or put to use. Later, it was necessary to attach a copy of the surveyed plot while applying for such lands.⁵⁵

In the mid 1880s, when the reservation of the forests and improvement of forest administration were being contemplated, it was felt that '[p]reliminary to carrying out

⁵³ Pillai (1940: 260)

⁵⁴ The first ever survey of the Tiruvitamkur was commissioned in the early decades of 19th century by Ward and Conner. The survey included enumeration of population, social groups and collation of the information on production process apart from determining the geographical layout of the state. The memoir of the survey published in two volumes became widely quoted documents relating to the various aspects of government. Survey and demarcation of the land based-taxable private properties and the state property were started in the wake of the elaborate revenue settlements from mid 19th century. Along with this, efforts to demarcate the boundaries of the Tiruvitamkur, with the adjoining territories (Madras presidency and Cochin Princely State), also were initiated in 1870s (RAT 1875-76:98).

⁵⁵ RAT (1878-79: 48), by recommending and implementing these programmatic steps Bourdillon was enunciating the three key concepts of the German Cameralistic Science of Forestry such as the principles of 'Minimum Diversity', 'Balance Sheet' and 'Sustained Yield' (Scott 1998: 15 and Rajan 1998: 332-333).

the schemes of forest conservancy ... it was found necessary in the first place to acquire a full and accurate knowledge of their extent, condition, resources and value and to mark off the reserves.'⁵⁶ Survey was an instrument to enhance the legibility of terrain in which the state was intending to indulge with. A Survey Department of the State was formed for this purpose in 1883.⁵⁷ Demarcation of boundaries of reserve forests and concession lands became a major preoccupation of the Forest Department by the early decades of 20th century. Maps and sketches were made annually and the progress of the work was promptly reported to the paramount power.⁵⁸ By 1920s, the Survey Department of Tiruvitamkur was working in collaboration with a team of experts from Survey of India. Owing to these activities there accumulated a considerable amount of numerical and geometrical data for the use of the forester. In short, statistics as a state craft penetrated into forestlands for governance.

Apart from mapping and surveying it was also important to demarcate boundaries of the blocks of forests recognisable on the ground.⁵⁹ The plan was to 'cut up into blocks [the reserved forests] the area of which must be

⁵⁶ RAT (1885-86: 80). According to James Scott (Scott 1998: 25-33) this is a measure for increasing the 'legibility' of forests.

⁵⁷ Minor triangulation of Tiruvitamkur as part of the revenue survey began in the year 1883, when the revenue survey was organised in State. A Survey Department was organized even earlier. Expertise for the survey was obtained by training surveyors, demarcators and classifiers besides appointing experienced hands from cadres of British Indian service. It was said that 'Demarcating of properties by means of stones was novelty to people. They did not like it also on the account of expense it entailed up on them and showed great lukewarmness in doing their part of the work.' (RAT 1883-84: 47)

⁵⁸ See detailed reports on the progress of survey and demarcation that regularly appeared in the Reports on the Administration of Tiruvitamkur for various years.

⁵⁹ Damodaran (1992: 419-424)

accurately ascertained ...and these blocks must again be cut up into compartments for more detailed working'.⁶⁰ Then the utility of such map was expected to be much more than simple display of the geographical features of the forested territory. It also enabled planning for future developmental activities. Valuation survey involving enumeration, classing and measurement of the standing timber and their spatial distribution was to follow the geographical survey, so that this information could be incorporated into maps to aid planning of phased extraction of timber. In a way, as James Scott observed, this enabled the forester to read the regularised forests area he is commanding, by sitting in an office remotely placed from his territory.⁶¹

The actual process of estimating the timber yield and distributing the extraction across the space and time in the mixed stands of forests were becoming increasingly complex, as the sylvicultural standards for most tropical trees were not yet known. By 1902, preparation of preliminary working plans was initiated in all the Divisions excepting the Southern Division.⁶² In some cases, earlier plans were found to be impractical on ground. Therefore, these working plans had to be reworked. For instance, 'the working plan scheme which was in operation from 1076 to 1081 [year 1901 to 1906], each reserve was divided into six blocks. The blocks were found to be too large to work within a year. A scheme was drawn up and a new rotation to run on for 20 years was

⁶⁰ Bourdillon (1893: 210) and the Tiruvitamkur Forest Manual (TFM 1917: 183-194) provides elaborate stipulations for survey and demarcation of the reserved forests.

⁶¹ See Scott (1998:15)

⁶² RAT (1902-03:20)

started ... subject to revision at the end of five years.'63 The enumeration work was also taking up time of survey staff and it was reported that they were mostly engaged in the valuation survey at the Cheduruney Valley and therefore no other major surveys could be taken up. In the valley, about 130 sq. km. of forestlands 'were explored and the distribution of species and the composition and density of the forests were examined and recorded.'64 The Valley was one of the first forest tracts to be enumerated, surveyed, yield calculated and predicted as per the established protocols of continental forestry. Therefore, the results of the felling from the Cheduruney Valley were anxiously awaited to judge if these protocols had universal applicability to the forests in the State. As a result the working plans prepared for the other tracts were temporarily suspended while waiting for the results of Cheduruny Felling Series.⁶⁵ However, no credulous results came forth due to a number of hindrances such as scarcity of labour, difficulty to access the depot from coupe and inefficiency of the felling contractor.

The first two decades of the 20th century witnessed regular demarcation of forest boundaries, enumeration of timber trees and enthusiastic pursuits of preparing working plans for more and more forest blocks. Plans for harvesting special resources such as sandalwood were also under preparation during this period. It was reported that, in 1910, Conservator's office prepared 311 maps. Such information was frequently made in the Reports of Administration to show the progress of the work. Despite all these, even at the

⁶³ RAT (1906-07:19)

⁶⁴ RAT (1905-06: 22)

⁶⁵ RAT (1908-09: 21)

end of 1910, the sustained yield forestry was yet to be born in the State. The Report by the Conservator testifies this:

"With the exception of the Shendurni Working Circle, all other reserves of the Northern, Kottayam, Central and Quilon Divisions were worked more or less under the provisions of the old preliminary Working Plans, with such deviations and modifications as were necessitated by the very defective and imperfect nature of those plans. No working plan of even preliminary nature has yet been drawn up in respect of the Reserves in the Southern and the High Range Divisions." (RAT 1909-10: paragraph 28)

A score of factors such as accumulation of large quantity of timber in the depots, delays in developing timber transportation and storage facilities etc. were also hindering normalisation of the forests. In an effort to conceal the growing apprehensions pertaining to the practicability of the "working plan system", government asserted that 'the Working Plan system is very important and it will be prominently kept in view.'⁶⁶

There was a perceptible tension and widening gap between the idealistic forest management expectations and what was practical on the field. Some of the areas of tension were: planning and implementation of working plans, settlement and notification of reserves, timber extraction and timber marketing. The *Sirkar* expected the Department to hasten up planning and development, though the ground realities were proving to be different. By 1916, after nearly two decades of efforts, despite the enthusiasm shown by the Department and the state, the total area of forests with completed working plan was less than 11 per cent of the

⁶⁶ RAT (1909-10: 15)

target. Moreover, the targets of felling provided in the working plans were proving to be unrealistic and the revisions made on them were upsetting the original expectations. A forest conference held in 1917 considered these factors and decided to give-up preparation of additional plans on elaborate and detailed scale 'in view of the incompleteness and unreliability of the data available.' It was also decided that preparation of simple preliminary *working schemes* by the Divisional Forest Officers in charge of the respective Forest Divisions were sufficient to meet immediate requirements.⁶⁷ In the next year it was further decided that:

"In regard to the sanctioned working plans...a Committee consisting of the Conservator of Forests, the officer who prepared the plan, and the Divisional Forest Officer, should jointly go over the area covered by each of the sanctioned working plans and Submit to the Darbar their notes of inspection and recommendations for any revision that may be necessary in their working during the next five years." (RAT 1917-18:18)

Even during this period of high forestry ideals, timber extraction was organised either through contract agency or by sale of marked trees standing in the coupes for lump sum money offers. It was contrary to the idea of direct working by the Department as envisioned by Bourdillon. In less than a quarter century, most of the ideals of the forestry were proved impractical.

By 1920s, the rules for the preparation of working plans were also considerably altered. It is evident from the statement given below:

⁶⁷ RAT (1916-17: 17)

"In the year 1917...Conservator of Forests, brought to the notice of Government that, in the light of the experience gained in actual working, several deviations were found necessary from the prescriptions of the sanctioned working plans and that, as the preparation of elaborate working plans was costly, it would suffice for the future to prepare simple preliminary working schemes for the remaining areas by the officers in charge of the respective Divisions." (RAT 1922-23 :26)

This proposal was agreed by Government. When the Conservator was asked to submit a set of draft rules to govern the preparation of such schemes, he reported that no hard and fast rules were necessary and maintained that:

"...the details required for the compilation of a simple working scheme would depend upon the demands to be made on the forests, the nature and value of the produce to be removed there from and other factors which could not be fixed or regulated; and that it was enough if the headings given in the Code for preparation of working plans were selected and adopted at the discretion of the officers preparing the simple schemes according to the requirements in each case." (RAT 1922-23: 26)

This was accepted and order was brought out stating that there was no necessity for preparing working plans for forest areas "which were not likely to be taken up for working immediately for such reasons as inaccessibility, non-existence of timbers likely to pay, heavy transport charge etc.; and that such schemes be prepared only for areas the working of which was either profitable or necessary for other reasons." ⁶⁸

The shortfalls in timber extraction caused by the absence of working plans were brought to the attention of the Conservator by the Chief Secretary in a letter in 1929.

⁶⁸ RAT (1922-23: 26)

"It was felt that the functions of the Department in formulating working plans required looking into since no scheme to develop a forest can be satisfactorily undertaken until it is known what forests contains and until working plan for extraction of timber has been drawn up. With this object in view, Government called for a report showing the areas for which no working plans are immediately required and those for which working schemes have to be drawn up urgently. Government regret that no new working plans schemes were taken up and completed during the year. This important work should be received the early attention of the Conservator." (FAR 1928: i)⁶⁹

Adding to this failure in working plan system was the diversion of land in reserved forests for non-forestry purposes, especially for food crop cultivation following the scarcity of food grains in Tiruvitamkur. Even forests covered under the working plans were "disafforested" in 1938.⁷⁰ By this time the working schemes or plans were available to nearly 47 percent of the reserve areas as against 33 percent in the Madras presidency.⁷¹ These figures need not be indicative of high-level of success achieved by Tiruvitamkur, as we have seen that the facts are contrary to it. By 1920s, a definite shift in the policy, regarding reservation, took place. Government had announced that '[t]he policy of the department has been to refrain from further reservation of extensive areas... It is also the declared policy of the

⁶⁹ Chief Secretary to Government in an order dated 14th November, 1929, as response to the Reports on the Administration of Forests of Tiruvitamkur and settlement Officer's progress report.

⁷⁰ RAT (1937-38: 59)

⁷¹ RAT (1925-26: 42-43)

Government to disafforest as much area as possible as is suitable for paddy cultivation.⁷²

Towards 1940s, the ideals of Sustained Yield Forestry suffered more due to unanticipated huge demands for all kinds of timbers arising from the needs of the Second World War. Apart from this, increased demand of the wood-based industries which were supplying produce for the War resulted in the violation of forestry stipulations.⁷³ The following figures of timber supplied by Forest Department will illustrate this point: By the last phase of the War, in 1943-44 alone, the timber supplied was to the tune of 156,000 cft. of jungle wood of superior quantity, 29,000 cft. of teak and 73,000 cft. of rosewood logs and scantlings. This is besides the bulk timber of 469 teak poles and 645 cft. of jungle wood piles supplied in the same year.⁷⁴ Along with this, the demand for cultivable land and the inordinate demand for timber, had severely upset the ideals of the sustained yield forestry in Tiruvitamkur.

Yet another challenge to the forestry ideals took place when the inviolate territory of forester was 'intruded' by peasants for 'disfforesting' the forests for augmenting grain production in the state.

⁷² RAT (1925-26: 41-42) and Proceedings of the Government of His Highness the Maharaja of Tiruvitamkur. Viz S.R. 3142, Dewan, Dated 1-7-1097 (1922) in TFM (1917:1-7)

⁷³ See the *Report on the Administration of Tiruvitamkur* during the war period for details of the produces supplied by the wood based industries in the Tiruvitamkur. For instance, in 1941, The Tiruvitamkur Wood Works had to extend factory premises considerably and install new machineries to cope with these increased demands (RAT 1940-41: 114).

⁷⁴ RAT (1943-44:11), further, huge escalation in timber revenue also suggests unusually heavy extraction of timber during the period. For instance, the receipts due to timber of all kinds in 1943-44 were Rs. 46.15 lakhs as against the Rs. 27.58 lakhs in 1942-43 (RAT 1943-44: 54). Similar escalation in receipts can also be seen in the sale of the 'ascu' treated wood (RAT 1943-44: 55).

"Grow More Food!" Forestland for cultivation

Tiruvitamkur was a rice importing country even in the later half of 19th century. Various measures were taken up for increasing the grain production by popularising use of the chemical fertilisers, pesticides to control plant diseases and agronomic cultivation. However, this did not solve the shortage of food grain. Despite this, even during the first decades of 20th century, government turned a cold face towards the requests for opening up lands inside the forests for cultivation. However, a trend had slowly set in, where even the interior forest areas were opened up for cultivation.⁷⁵ By the latter half of the 1920s opening up of forestland for cultivation was regularly reported from various localities. Cooperative Societies were formed for 'forest colonisation' (as it was referred to). For instance, the Reports of Administrative for the year 1919-1920 tells us that in the previous year '...a total extent of 2 sq. miles and 457 acres, was disaforested from several Settled Reserves and thrown open for registry for cultivation and for public purposes.⁷⁶ In a speech in the Sree Mulam Popular Assembly towards the 1930s Jacob Curian argued for allotment of more land for rice cultivation. He observed that:

The country should be able to produce all the paddy and rice necessary for the consumption of her people. With a view to attaining this object, all the lands in the hills and along the back waters available for cultivation should be assigned to

⁷⁵ These decisions were against the position taken by Bourdillon in 1906; by quoting the 1893 forest policy of the British India, which stated that 'honey combing of the forests should be stalled at any cost', he advised government not to open cultivation inside the reserve forests. See Proceedings of the Government of Highness the Maha Raja of Tiruvitamkur in The Tiruvitamkur Land Revenue Manual (TLRM Vol.II 1915: 256-260)

⁷⁶ RAT (1919-20 :16)

cultivators. As the result of similar representations in the former sessions of the Assembly, Government had already sanctioned the assignment of swampy areas in Forest Reserves. But the areas which were actually assigned for cultivation seldom exceeded 50 or 60 acres in each taluk. It was like the mountain labouring and producing a mouse. That kind of closefistedness in the assignment of public lands should go by the board. (SMPA 1928: 138)

He further stated that "every inch of cultivable land anywhere in the mountains or in plains should be given away for paddy cultivation."⁷⁷ Dewan in his reply, while sharing the concerns of the member, assured that the opening up of the Mannakkandam, a swampy reed forest in the Northern Division, is under the consideration of Government. Such representations were made in the Assembly frequently though out the 1920 and 30s.⁷⁸

Gradually, Forest Department facilitated the establishment of 'Agricultural Colonies' in forest areas in association with the Agricultural Department.⁷⁹ With the fall of Burma during the war, the rice import to Tiruvitamkur was severely affected. The Report on Administration for 1942-43 stated in a dismal note that '[t]he last ship-load of rice from Burma arrived at Cochin on the 1st march 1942.'⁸⁰ Food shortage had become so acute that stringent measures were

⁷⁷ SMPA (1928: 138)

⁷⁸ SMPA (1929: 138)35-37

⁷⁹ For instance it was stated that an 'Agricultural colony is organised at the Konni where there were 24 colonists under the initiative of the Agricultural Department. They brought under cultivation, on lines approved by the Department, the blocks assigned to them for colonisation.' (RAT 1934-35: 134) This was subsequently expanded in the coming years. More blocks comprising as many as 165 acres of land were therefore sanctioned to be assigned for colonisation during the year.

⁸⁰ RAT (1942-43: 161)

taken to tide over the food grain scarcity. Through a notification, State put an upper limit for the removal of bran while husking the paddy; it was 25 per cent. Further, a cess was imposed on the export of tapioca starch.⁸¹

In 1943, a significant reversal of state policy took place. In spite of the aggravating food shortage, '[g]overnment ...laid it down as their definite policy that denudation of forests and the reckless registration and fragmentation of be forest areas should rigorously checked. The disafforestation of forest lands for the purpose of cultivation has thus been completely stopped. Swampy and grassy areas within forests will be granted for cultivation only on short term leases.' ⁸² Subsequent policy was to lease out lands for a period ranging from three to seven years rather than permanently alienating the forestland for cultivation. The policy was to give priority to requests from Co-operative Societies, syndicates and similar associations with a view to encourage joint efforts and extending the benefits of the scheme to largest number of people. These desperate measures for improving the food situation occluded the embarrassment stemmed out of the failure in living up to the forestry ideals. In some cases, it was insisted 'that the lessees should plant out the lands with stumps or seeds of trees according to the directions of the Forest Department.' An 'area of 5,726 acres was, thus, leased out for cultivation under this scheme in 1118 [year 1943] of which 3,685 acres were cultivated with paddy, tapioca and ragi.²⁸³ And

⁸¹ RAT (1942-43: 162)

⁸² RAT (1942-43 : 50-51)

⁸³ RAT (1942-43 : 52-53)

alienation of forestland for promoting food cultivation sustained throughout 1950s.

Concluding Remarks

With the coming of Colonial science of forestry, forests of Tiruvitamkur were envisioned as an exhaustible resource which needed improvement by adopting specific scientifically informed measures. Extraction of timber was the overarching concern. Continuous or sustained production of it was set as the measure of 'success' of forest conservation. In the colonial discourses of progress, the improvement of forest meant employing definite measures for maximising the outflow of timber resources for the present as well as in the future.⁸⁴ The rationale and modalities of achieving this end required institutionalisation of practices in compliance with Maximum Sustained Yield Principle championed in the discipline of continental forestry. Means of institutionalisation of this principle required enunciation of legislations and policies, creation of a legible Forest Estate, enumeration of trees, assessment of growing stock and strict adherence to the forest working plans.

Reservation of forest for the use of government was the first step in the normalisation of the forest. This was followed by envisioning forests through the geometrical lens. That is, making forests amenable to measurement and calculation through survey and demarcation of the reserved forests. Preparation of working plans by estimation of timber value, annual increment of timber volume and phasing of timber extraction in the well-demarcated forest space formed the

⁸⁴ This logic of use of resources in future provided possibilities for thinking about conservation.

subsequent strategy for making forest legible. As is evident from the foregoing description the desire for creation of the legible forest estate was never achieved fully, as in the case of woodland Bengal.⁸⁵ The system of preparing working plan itself had to be compromised as simplified working schemes prepared with subjective judgements was considered apt after trial working.

The creation of a legible, regular and exclusive normalised forest for timber production overlooked the local needs and particularities. Some of these local factors gradually assumed considerable proportion and challenged forestry ideals. In case of Tiruvitamkur, it was the requirement of cultivable land for food grain production that upset the inviolable prescriptions of the forester. Succumbing to these pressures, the reserve forests were "disafforested" and opened up for cultivation. Though the forestry ideals were imported from France and Germany they were mediated through the British Imperial processes and local situations. The forestry as it was practiced in the late colonial phase had local and European elements suffused in it.

Retrospectively, the arrangements of forestry expected much more than what was possible at the ground level. It can be proposed that such a situation took place because of the knowledge developed for sustained wood extraction from non-tropical forests could not capture the complexity involved in the tropical forests. Both colonialists and the 'modernised natives' strived for successful implementation of such a knowledge. Therefore, it can be argued that the unanticipated negative outcomes were not so much because

⁸⁵ Sivaramakrishnan (1999: 80)

of the shortcomings of the agents involved in the process but such outcomes were more of a structural phenomenon. Similar observations were made by the historians of similar projects in British India. For colonial instance. the trigonometrical survey organised with the initiative of the East India Company on the Indian subcontinent ended up as a flawed ideal.⁸⁶ It is true that quite often forestry discourse attempted to conceal the failures rather than reveal them. But, this does not mean that colonial forestry was a total failure though some of the most celebrated ideals of the continental forestry were proved impractical in Tiruvitamkur. Like the flawed ideal of the trigonometrical survey, the colonial forestry created a myth of the forests as a knowable and legible and amenable to the particular modes of manipulative interventions preached by its proponents.

References

- Aitchison, C.U.(comp.) A Collection of Treaties. Engagements and Sanads Relating to India and Neighbouring Countries. Vol.10. Calcutta: 1929; Delhi: Mittal Publications, 1983
- Baden-Powell, B. (1893). Forest Law: A Course of Lectures on the Principles of Civil and Criminal and on the Law of the Forest. London: Bradbury, Agnew, & Co.
- Bourdillon.T.F. (1893). *Report on the Forests of Tiruvitamkur*. Trivandrum: Tiruvitamkur Government Press.
- Chundamannil, M. (1993). *History of Forest Management in Kerala*. Peechi, Thrissur, Kerala, India: Kerala Forest Research Institute.

⁸⁶ Edney (1997)

- Damodaran, A. (1992). Local Self-Governments and Geometry of Biodiversity Conservation: Roots of Incompatibility. *Economic and Political Weekly*, 419-424.
- D'Arcy, W. E. (1898). *Preparation of Forest Working Plans in India*. Calcutta: Government of India Press.
- Edney, M. H. (1997). *Mapping an Empire: The Geographical Construction of British India, 1765-1843.* Chicago/London: University of Chicago Press.
- Gadgil, M., & Guha, R. (1992). *This Fissured Land: An Ecological History of India*. New Delhi: Oxford University Press.
- Grove, Richard (1994). Green Imperialism: The Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism, 1600-1860. Delhi: Oxford University Press.
- Guha, R. (1989). *The Unquiet Woods: Ecological Change and Peasant Resistance in the Himalaya*. Delhi: Oxford University Press.
- Latour, B. (1987). *Science in Action*. Milton Keynes: Open University Press.
- Ludden, D. (1999). *An Agrarian History of south India*. Cambridge: Cambridge University Press.
- Mann, M. (2001). German Expertise in India? Early Forest
 Management on the Malabar Coast, 1792-1805. In G.
 Berkemer, H. K. Tilman Frasch & J. Lutt (Eds.), *Explorations in the History of South Asia: Essays in Honour of Deitmar Rothermund* (pp. 9-26). New Delhi: Manohar.
- Mathew, K.S. (1999). Trade & Commerce (1500-1800). In P. Cheriyan (Ed.), *Perspectives on Kerala History- The Second Millennium* (pp. 180-221). Thiruvananthapuram: State Editor, Kerala State Gazetteers.

- Miller, P., & Rose, N. (1993). Governing Economic Life. In M. Gane & T. Johnson (Eds.), *Foucault's New Domains* (pp. 75-107). London: Routledge.
- Nair,C.T.S., Chundamannil, M., & Muhammad E. (1984). Intensive Multiple Use Forest Management in the Tropics: A Case Study of the Evergreen Forest and Teak Plantations in Kerala, India. Peechi, Thrissur, Kerala, India: Kerala Forest Research Institute.
- Pillai, T.K. Velu,. (1940). *The Tiruvitamkur State Manual,IV Volumes, Economic Affairs*. Thiruvananthapuram: (Reprinted 1996) State Editor, Kerala Gazetteers.
- Rajan, R. (1998). Imperial Environmentalism or Environmental Imperialism? European Forestry, Colonial Foresters and the Agendas of Forest Management in British India 1800-1900. In
 R. Grove (Ed.), Nature and the Orient. London: Oxford University Press.
- Rammohan, K.T. (1996). *Material Processes and Developmentalism:* Interpreting Economic Change in Colonial Tiruvitamkur, 1800 to 1945, University of Kerala
- Rammohan, K.T. (2006). *Tales of Rice: Kuttanad, Southwest India*. Thiruvananthapuram: Centre for Development Studies.
- RAT (Report on the Administration of Tiruvitamkur) various years (from 1862 to 1947), Tiruvitamkur Govt., Trivandrum.
- Said, E. W. (1978). *Orientalism: Western Concepts of the Orient*. London: Penguin Books.
- Sangwan, S. (1999). Making of a popular debate: The Indian Forester and the emerging agenda of state forestry in India, 1875-1904. *Indian Economic Social History Review*, 36, 187-237.
- Scott, J. C. (1998). Seeing Like a State: How Certain Schemes to Improve Human Condition Have Failed. New Haven: Yale University Press.

- Sivaramakrishnan, K. (1999). *Modern Forests: State Making and Environmental Change in Colonial Eastern India*. New Delhi: Oxford University Press. Bourdillon. 1993
- SMPA (Proceedings of the Sri Mulam Popular Assembly) for years 1928 and 1929, Tiruvitamkur Govt., Trivandrum.
- TA-Tiruvitamkur/Trevandrum Almanac various years (from 1860 to 1947), Tiruvitamkur Govt., Trivandrum.
- TFM (Tiruvitamkur Forest Manual) (1917, 1947), Tiruvitamkur Govt., Trivandrum.
- Tharakan, P.K.M. (1999). Development of Colonial Economy In Kerala, (1850-1947). In Cheriyan, P.J. (Ed.), *Perspectives on Kerala History- The Second Millennium* (pp. 360-401).
 Thriuvananthapuram: State Editor, Kerala State Gazetteers.
- TLRM (Tiruvitamkur Land Revenue Manuals) (1915) Tiruvitamkur Land Revenue Manuals-in V Vols, Tiruvitamkur Govt., Trivandrum.
- Varghese, T. C. (1970). Agrarian Change and Economic Consequence: Land Tenures in Kerala, 1850-1960. Bombay: Allied.
- Ward,B.S, & Conner,P.E. (1863)[1994]. Geographical and Statistical Memoir of the Survey of the Tiruvitamkur and Cochin States Executed under the Superintendence of Lieutenants Ward and Conner from July 1816 to the end of the Year 1820 Vol. I. Reprinted State Editor, Gazetteers Department, Trivandrum.

KFRI Tree Health Helpline

Kerala Forest Research Institute (KFRI) in its three decades of existence has emerged as a hub of tropical forest research. One of the leading branches of research which cut across subject disciplines was the effort to solve tree health problems. This includes problems faced at single tree level to those at nurseries and plantation levels. Thousands of queries have been attended to, problems diagnosed arid remedies prescribed. Various divisions of KFRI like Soil Science, Entomology, Pathology, Botany, Silviculture, Wood Science, Statistics and Wildlife and Physiology had actively Involved In either attending to the problems in both multidisciplinary and monodiscipilnary modes.

The comprehensive tree helpline can attend to all queries related to tree planting and management such as site selection, species site matching, planting thinning, soil testing, fertilization, pest, disease and weed management, multi-species interactions, landscape level afforestation programmes, tree/wood sample identification, preservative treatments and economic valuation. The clientele of the service will be the general public including students who participate in tree planting programmes and also private and public firms.

Services offered

- 1. Site selection: Identifying the right locales for tree pLanting species
- 2. **Site matching:** Identifying which tree species are suited for a given site
- 3. Planting: Recommendations on spacing and time of planting
- 4. Thinning: Information on when and how to thin woodlots
- 5. Soil testing: Quantifying soil nutrients
- 6. **Fertilizer application:** Recommendations on type, quantity and timing of fertilizer use
- 7. **Pest, disease and weed management:** Protocols for monitoring and recommendations on pest, disease and weed control with special focus on eco-friendly methods
- 8. **Multi-species Interactions:** Knowledge on species mixing and their planting protocols
- 9. Landscape level / afforestation Programmes: logistical support for large scale tree planting efforts
- 10. **Tree/wood sample Identification:** Identification of wood samples and their strength measurements
- 11. **Preservative treatments:** Timber seasoning protocols and preservative treatment methods
- 12. Economic valuation: Economic projection and valuation of woodlots

Contact: Scientist Incharge Tree Health Helpline Kerala Forest Research Institute Peechi P.O., Thrissur District, Kerala - 680653, India. Tel: +91-487-2690222