

**SITUATED KNOWLEDGES AND NATURAL RESOURCE-USE:  
THEIR EVOLUTION IN KALAKAD MUNDANTHURAI TIGER  
RESERVE**

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RESERVE**

DISSERTATION SUBMITTED IN PARTIAL FULFILMENT  
OF THE REQUIREMENTS FOR THE  
AWARD OF THE DEGREE OF  
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JAWAHARLAL NEHRU UNIVERSITY, NEW DELHI.


**M. PONTHIRUNAVUKKARASU**

**CENTRE FOR DEVELOPMENT STUDIES  
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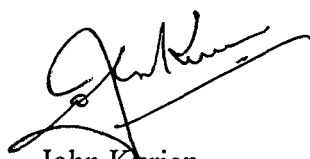
I hereby affirm that the research for this dissertation titled '*Situated Knowledges and Natural Resource-Use: Their Evolution in Kalakad Mundanthurai Tiger Reserve*' being submitted to Jawaharlal Nehru University for the award of the Degree of Master of Philosophy in Applied Economics, was carried out entirely by me at the Centre for Development Studies, Thiruvananthapuram.

Thiruvananthapuram

  
M. Ponthirunavukkarasu

Certified that this dissertation is the bona fide work of M. Ponthirunavukkarasu, and has not been considered for the award of any other degree by any other university.

Supervisors



John Kurien  
Associate Fellow



Achin Chakraborty  
Associate Fellow



Chandan Mukherjee  
Director  
Centre for Development Studies  
Thiruvananthapuram

## *Acknowledgements...*

*Thesis-writing seemed something far off from me till the last moment. The delay was some strange sense of hope that the reading of different authors in approaching the problem would finally put everything in place. The different methods that Dr. John Kurien and Dr. Achin Chakraborty had to employ to make me drop my 'arrogance' in the relationship between coursework and thesis in spite of my marginal improvements once in a blue moon, made the thesis happen. The incompleteness hanging around the thesis is however, the remnants of my arrogance in being inattentive to insights they offer through their academic commitments.*

*The relationship between content of the thesis and communication was mediated by the efforts of both Deepita and Praveena. Any sense of coherence that the thesis could be associated with is because of the different suggestions they offered. Forgetting that communication requires taking the responsibility of making the reader participate in a particular way of thinking I threw concepts up in the air as it were, with the dream that the reader would make the links. Some marginal efforts to take the reader seriously that I believe to have made couldn't be without the 'pain' I became to both of them.*

*All my classmates in their different attempts to link learning in CDS with life as a process for which they have to take responsibility enriched my own understanding of such a link. The ideal possibility of understanding each and every effort of what each individual learned from her/his own research problem did not happen. But certain crisis moments and the decisions made in those moments by the individual could offer insights about what the link between learning and life is made to be. These insights are important in the background of floating in the river of Time during coursework, we could ask ourselves whether M.Phil. was just a ritual of two years, whether the Question decided the Answer or the Answer decided the Question etc. These questions shared by other CDSians further enriched the attempts in questioning.*

*Christopher and his friends Satish Chandran, Karunakkar, Padmalal, Sri Kumar played the very important role of mediating the relationship between form of the thesis and communication. The map of the Tiger Reserve, the copy of the Working Plan of the Tinnevely division are just few of the very important tasks they helped me with. The library staffs were with such sensitivity that the books in the library were available as if they were in a friend's home. The M.Phil.-Office-Staff gave us different options for making marginal improvements in quickly rescheduling the delays in the process of thesis-submission. Georgekutty took great care to format the thesis in spite of my irregularities in arriving at the final form.*

*A special mention of Arivazhkan for sharing questions about the relationship between researcher and the people studied is important. The questions we were asked by the people whose lives we tried to understand would shatter any pretence of locking them into categories of rationality that our lives made us believe in.*

*The relationship between thesis and coursework, between content and communication, between learning and life, between form and communication, between researcher and the people studied could be summarized in terms of the sensitivity to 'undo what I have become'. The change involved in such a process is not linear but discordant. The attention to the way identity with the past habits and rationality in questioning it are complexly linked to decide action in a particular moment, decides the incompleteness in change. A murmur 'Thought thinks its own history (the past) in order to free itself from what it thinks (the present) and finally be able to think otherwise (the future)'. The incompleteness in the thesis becomes just unbearable.*

*M. Ponthirunavukkarasu*

*Abstract of the Dissertation*  
**Situated-Knowledges and Natural Resource-Use: Their Evolution in Kalakad-Mundanthurai  
Tiger Reserve**  
M. Phil Programme in Applied Economics, 1999-2001  
Centre for Development Studies  
*M.Ponthirunavukkarasu*

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This study is primarily about the changes in the way adivasis' (Kanikkars) skills has been put to use with the changes in the administration of forest-resources in Tinnevely (Tirunelveli) in the Madras Presidency (Tamil Nadu) during the colonial and post-colonial period.

Continuous transfer of general skills from other contexts of forest resource-use to aid formation of specific skills in a site of application could lead to innovation in terms of change of resource-use. The transfer of general skills of forest resource-use to specific skills, addressing issues of regeneration and allocation for the non-local demand, is the situated knowledge of the forest department. In the case of change in the mode of resource-utilisation of forests, further, the dependence on general and specific skills of the pre-existing forest use (when the forests catered to local demand) of adivasis is important. This selection became a negative externality for the adivasis especially in a context of the forest department acquiring and legitimising exclusive rights over administration of forests. This was because of the transfer of general skills to specific skills in a context of activity of forest use of adivasis being monitored by the forest department as certain specific skills of the adivasis were alone approved and used for the changes in resource utilisation. This further led adivasis to evolve different methods to question the information about and, basis of resource allocation of forests by the forest department with exclusive control over administration catering primarily for non-local demand. Thus the situated knowledge of adivasis in the transfer of their general skills to aid formation of specific skills in forest use undergoes change.

The first chapter in the study will introduce the problem. The second chapter would begin with the background of change in the administration of forests in India and, its implications during the colonial period, in the effort to cater to a demand, new and different from the local demand in the past. The changes in the administration of forests in Tinnevely in terms of change in demarcation for a special department (the forest department) from the revenue department, the changes in the method of regeneration and the changes in the method of working of forest resources would thus fall in perspective. The maintenance of steady flow of supply of the produce as per the new mode of resource utilisation is then discussed for the evergreen, teak forests' regeneration and extraction as well as fire protection operations. The third chapter would specifically focus on the reallocation of existing use-rights of the ryots who are the neighbouring village communities, and, adivasis. In the case of ryots, the specific example of catering to their demand for fuel and grazing vis-à-vis the demand for fuel from railways in the tank-beds is discussed. The assertion of use-rights of the ryots is then discussed with a specific example. In the case of reallocation of use-rights for adivasis, the selective dependence on their skill becomes important. The next focus would be how they acquire and transfer their situated knowledge about forest by taking specific examples from their way of using forests. Then the strategy through which the adivasi skills were put to use in forest operations especially in the regeneration of teak plantations is discussed with the changes in their assertion of use-rights. The fourth chapter would discuss the changes in the administration of forests in the post-colonial period in the Indian context in terms of changes in demand from the forests from industries, as well as, changes in the demand for preservation. This would help to locate the changes in reallocation of adivasi use-rights and the selective dependence on their skill by the forest department in Tirunelveli. The final chapter would end with a summary and conclusion of the main findings of the study.

In the colonial period, when the forest department acquired its exclusive rights over forest land and produce, it was accompanied by the attempts at reallocation of use rights and, the selective dependence on the existing skills of forest-use for the expertise of the new mode of forest-resource utilisation. The incompleteness of the reallocation of existing use-rights disappeared in the legitimisation of the exclusive right over forestland and produce for public interest in conservation of catchment areas of river system irrigating the agricultural lands in the revenue district. The dependence on existing skills of forest use disappeared with the consideration that sustaining the supply of marketable forest produce occurred because of scientific knowledge from above and outside deciding the regeneration of forests. The ponamdar forestry system, reallocating use-rights of adivasis over forestland as liability for their skills in forming inputs to the new mode of forest resource utilisation, further contributed to the ambiguity. The use-rights of certain adivasis over forest land realised by migrating to the Singampatti Zamin and Travancore forests was also another option available. In the post-colonial period, the public interest that is invoked is the preservation of the tiger. The debate around the public interest led to questions around the exclusive claim over forest land and output by the forest department affecting use-rights over produce of the local population, and serving the non-local demands from the forests which further affected biological diversity. The adivasis in this area through their associations for the habitations voice the specific dilemmas and struggles in each habitation around these lines in strategic relationship with political parties.

# CONTENT

<b>Title</b>	<b>Page No.</b>
<i>List of Tables</i>	
Chapter 1	
<b>Introduction</b>	<b>1</b>
1.1. The Present Context	1
1.2. The Problem	1
1.3. Study Area	8
1.4. Chapter Scheme	8
Chapter 2	
<b>Introduction and Legitimation of Property Rights of the Forest Department</b>	<b>10</b>
2.1. Introduction	10
2.2. Changes in Mode of Forest-Resource Utilisation during the Colonial Period	11
2.3. Attempts to Sustain Steady Flow of Supply for the New Mode of Forest Resource Utilisation in Tinnevely	14
2.3.1. <i>Changes in the Property Rights over Forest Land and Produce</i>	14
2.3.2. <i>Changes in the Attempts at Regeneration of the Forests</i>	19
2.3.3. <i>Changes in the Method of Working</i>	20
2.3.4. <i>Changes in Legitimation of Exclusive Property Rights over Forest Land and Produce</i>	21
2.4. The Transfer of General Skills to Specific Skills of the Forest Department (the Situated Knowledge of the Forest Department)	22
2.4.1. <i>Extraction and Regeneration of Evergreen Forests</i>	24
2.4.2. <i>Regeneration of Teak Plantations</i>	30
2.4.3. <i>Fire as Biotic Interference on the Forest Produce</i>	33
2.5. Conclusion	37

Chapter 3	
<b>Attempts at Reallocation of Existing Use-Rights of Forests and the Selective Dependence on the Existing Skills of Forest-Use</b>	<b>39</b>
3.1. Introduction:	39
3.2. Reallocation of Fuel and Grazing Demands of the Ryots vis-a-vis the Railways in the Village Tank-beds	40
3.3. Assertion of Use-Rights of Grazing of Ryots in the Kudiraimozhi Teri Reserve	44
3.4. The Changes in the Skill of Adivasis with the Changes in Environment and Tools of Resource-use and its Relationship with the Use-Rights	46
3.5. The Changes in the Use of the Skill of the Adivasis by the Forest Department in the Colonial Period	51
3.6. Conclusion	60
Chapter 4	
<b>Changes in the Use of Adivasi Kanikkars' Skills of Forest-Use in the Post-Colonial Period</b>	<b>62</b>
4.1. Introduction	62
4.2. Changes in the Administration of Forests in the Indian context in the Post-Colonial Period	63
4.2.1. <i>Changes in the Composition and Demand for Forests</i>	63
4.2.2. <i>Changes in the Administration of Preservation</i>	64
4.2.3. <i>Different Interventions in Preservation</i>	66
4.3. Changes in the Way Adivasi Skill was Used in the Post-Colonial Period	67
4.4. Conclusion	74
Chapter 5	
<b>Summary and Conclusions</b>	<b>76</b>
<i>Bibliography</i>	<i>81</i>



## LIST OF TABLES

---

Table No.	Title	Page No.
2.3.1.	Area of Reserved Forests in Tinnevelly Division	17
2.4.1.	Estimation of Yield of Evergreen Forests	26
2.4.2.	Classification of Evergreen Forests and the Acreage	27
2.4.3.	Estimation of Yield of Evergreen Forests as per Type A and Type B	27
2.4.4.	Price and Number of Trees Worked by Contract Agency in Different Evergreen Coupes	29
2.4.5.	Expenditure on Fire Protection in Various Ranges in the Tinnevelly Division	35
2.4.6.	Changes in the Expenditure on Fire Protection in the Various Ranges of the Division	35
3.1.1.	Forest Offences During the Decennium 1923-24 to 1932-33:	39
3.2.1.	Revenue from Tank Beds for the Decade 1885-86 to 1895-96	42
3.5.1.	Rates of unskilled labourers including Kanis in Ambasamudram Range:	56
4.3.1.	The Population of Kanikkars in the Tirunelveli District (as per Census 1961):	68
4.3.2.	The Population of Kanikkars, in the settlements as per (FREEP '98)	68
4.3.3.	Literacy and Educational Level of the Kanis (FREEP 98)	72

# Chapter 1

## Introduction

This study is primarily about the changes in the way adivasis' (Kanikkars) skills have been put to use in the context of changes in the administration of forest-resources in Tinnevely (Tirunelveli) in the Madras Presidency (Tamil Nadu) during the colonial and post-colonial period. Changes in the administration of forest resources could be seen as having two constituents. The first is the expertise for administration gained through the selective dependence on existing skill about the use of forests. The second is concerned with control over output and followed attempts at reallocating existing use-rights over forests. At issue, therefore, is the process of reallocation of adivasis' rights over forest-use that occurred along with changes in the administration of forests.

### 1.1. The Present Context:

There are 5 habitations of Adivasi Kanikkars within the Kalakad Mundanthurai Tiger Reserve (see 1.3 for location detail). Two of the habitations are considered to be in the core region of the reserve where no human intervention is expected as per the regulations of a Tiger Reserve. For such a human-free zone, displacement of the adivasis from the core region is considered necessary. This brings into issue reallocation of land in other areas for cultivation. The problem of cultivable land for adivasis is however, a more general issue. Other habitations either have no land or too little land for sustenance through cultivation. The issue for adivasis is not just rights over land for cultivation. It extends to all problems of dependence on forests for other uses like fuel, house-building materials etc. Nor does the issue close with the forest department's ownership of forestland. It also extends to the rights to administer forestland. Thus, the property rights of the forest department over forestlands and over output from the forestlands become an issue of contention.

### 1.2. The Problem:

The contest over forestland involving the adivasis' requirement for cultivation (very little when compared to that of the tiger reserve) on the one hand, and, the organisational requirement of the tiger reserve on the other, usually get addressed by considering the jurisdiction of the forest department as given. Thus the issue is usually dealt by considering

the property rights of forest department over the reserve as exclusive. Further, the rights over the produce from the forestlands is considered to flow from the rights over administration of the forest department. Justification of the property rights over forestland and over the produce from the forestland has been couched in terms of preservation of endangered species, such as the tiger. The adivasis are considered as migrant labourers to the forests and hence with no claim over forestlands. Adivasis justify rights over forest-use in terms of customary usage, i.e., they inherited this right from their ancestors, and, <sup>in</sup> the contributions they had made to forest administration through their role in the establishment of plantations.

The justification of the forest department of their exclusive claim to administer the forests and, that the adivasis are migrant labourers to the forests, invokes a past, which begins with the establishment of property rights of the forest department. As against this, the adivasis claim that their right to use forests inherited from their ancestors, invokes a past, which contests the exclusive claim of the forest department over the forests. The forest department's liability for adivasis for their role in regeneration of plantations had been, further, in terms of land for their cultivation. Thus, the contention between the adivasis and the forest department could be addressed from the manner in which the adivasi rights of forest-use were taken into account in the process of establishment of the property rights of the forest department over forestlands and its administration. This requires shifting the focus to an empirical context in which a special department (forest department) was formed during the colonial period from the revenue department for the administration of forest-resources.

In such an empirical context, the reallocation of existing rights in forest-use is an important dimension in the changes in the property rights over the forestland to the forest department. The role of the State considered as important in conservation of the forests for long-term interests through sustained yield of produce legitimised such a claim of the forest department over the forestland. Thus, 'scientific forestry' as an administrative strategy came into existence during the colonial period. The specificities of the area in which regeneration of a particular species was attempted then, expressed in terms of information about the relationship of the constituents of the area, was important for the forest administration. The existing knowledge about the forests, for example, of the adivasis' becomes important for the forest administration. Thus, forest administration was shaped in a particular site of application by the specific way in which the rights of use and regeneration conditions were taken into account. The changes in the information-set of the forest administration in dealing

with these conditions could be understood in terms of the changes in the situated knowledge<sup>1</sup> of the forest department.

The forest-use of adivasis, on the other hand, was through acquisition of skills during the process of working with other adivasis, in a context of 'activity' (honey gathering, fishing etc.). In a context of 'activity', where skill required in the process was not pre-determined, adivasis 'less-skilled' in forest-use learned to co-ordinate themselves with the environment in the process of co-ordinating with 'more-skilled' adivasis. (Ingold 1996). Further, allocation of the output from each activity organised in the forests, was as per the unwritten (cultural) forms of rights, responsibilities and privileges agreed upon by the community. The skills of the adivasis develop in the process of organising an activity and allocating the output. The adivasi skills, thus, are situated in a context of activity and undergo change. Sivaramakrishnan's (2000) understanding of local knowledge as integral to labour process through which forests could be used, is drawn upon for such an understanding of situated knowledge of the adivasis: '...the intimate acquaintance with a locality—its landscape, social relations of production and environmental management—that people develop as they work to change its appearance'.

The dependence on the situated knowledge of the adivasis in the generation of the situated knowledge of the forest department can be put in another form. Change in the mode of resource utilisation of forests necessitated a different expertise for the forest department so as to address non-local demand for specific species from the forests. Such a change in resource-use can be qualified with uncertainty about products, processes, costs and values of the resources. To address these uncertainties, techniques of problem solving and decision-making from a different context identified by research on forestry would be imparted to the forest department for the application in the particular context. We will refer to the techniques imparted as general skills and the skills evolving in a specific site of application as specific skills. Continuous transfer of general skills to aid formation of specific skills could thus achieve innovation in terms of change of resource-use. The transfer of general skills of forest

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<sup>1</sup> Haraway, D,(1994) used the term situated knowledges questioning the tradition of objectivity in science where the knowing subject is away from everybody and everything, seeing everything from nowhere. Situated knowledges, with a commitment to mobile positioning and to passionate detachment, 'require that the object of knowledge be pictured as an actor and agent, not as a screen or a ground or a resource, never finally as slave to the master...'

resource-use to specific skills, addressing issues of regeneration and allocation for the non-local demand, is thus the situated knowledge of the forest department.

In the case of change in the mode of resource-utilisation of forests, further, the dependence on general and specific skills of the pre-existing forest use (when the forests catered to local demand) of adivasis is important. The general skills of the forest department are also constituted by the inputs from adivasi knowledge of the forests. Adivasi knowledge of the forests is based on concept-formation of the intricacies of the forest-use and embedded in their general skills. However, adivasi knowledge required for the forest department undergoes a selection process because of the particularities of the regeneration process and the produce required for the non-local demand. Even the specific skills of adivasis are selected as per the requirements of the forest department: only those aiding the transfer of the general skills of the forest department into specific skills in a specific site of application are taken into account. This selection became a negative externality for the adivasis especially in a context of the forest department acquiring and legitimising exclusive rights over administration of forests. This was because of the transfer of general skills to specific skills in forest use of adivasis being monitored by the forest department as only certain specific skills of the adivasis was approved and used for the change in resource utilisation. The change in resource utilisation of the forests is neither based on mutual agreement about the transfer of (unwritten) rights of their use when forests were catering to the local demand nor leads to an increase in choice for the adivasis. This led to reversal of the plans and expectations about forest use of the adivasis, change in their perception about opportunities and constraints of action, reduction in the benefits associated with viable choices in forest use<sup>2</sup>. This further led adivasis to evolve different methods to question the information about and, basis of resource allocation of forests with exclusive control over administration for non-local demand by the forest department. Thus the situated knowledge of adivasis in the transfer of their general skills to aid formation of specific skills in forest use undergoes change.

By tracking the changes in the situated knowledge of the forest department, we attempt to understand how the conflict over the use-rights over the forests was tackled. A concomitant

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<sup>2</sup> Dragun and Martin P. O'connor (1993) categorising externalities as going unrecognized mainly because existing markets and, political and military processes permit their imposition, qualify externality in any context in these ways.

issue is how the selective dependence on adivasis' situated knowledge was important to the forest department in dealing with conditions relating to regeneration in the site of application. In the empirical context considered, the process of establishment and legitimisation of property rights by the forest department, including its rights over administration involved other actors too. These were the neighbouring village communities who were ryots paying land revenue directly to the state without any intermediaries. Understanding how the use-rights of these actors were taken into account would contextualise the way the use-rights of the adivasis was tackled. This study brings in other actors in the picture while tracing the situated knowledge of the forest department, in an attempt to grasp the complexity of the changes involved.

The neighbouring village-communities were affected in two ways by the exclusive claim of property rights over forest-resource use by the forest department: (1). Restriction in the physical access to the forests (2). Changes in the species composition of the forests and the reduction in the biological diversity affecting the dependence on the forests. Like the adivasis, the use-rights of these actors too became ambiguous. The regeneration of forests by the ryots when managed by them as a common property was again different from the methods adopted by the forest department. But there was difference between the way the use-rights of the ryots who were paying land revenue and, the adivasis, who were not paying any revenue, were addressed.

Sivaramakrishnan (1995) reviewed the literature on the extent of legitimisation of the exclusive property rights of the forest department over forestland and produce from the forestland throughout India. He is of the view that the way ambiguity about the exclusive property rights of the forest department over forestland and produce was expressed even by a single community was by employing different methods. These different methods emerged from the differences within the community as well as the extent of marginalisation the community had experienced historically. Co-operation along with complicity and conflict are interwoven in the resistance offered by different agents to the exclusive property rights of the forest department. Such attempts in legitimisation of exclusive property rights and resistance to it could thus be not in terms of a dichotomy but a continuum so that the outcome of the legitimisation is not predictable.

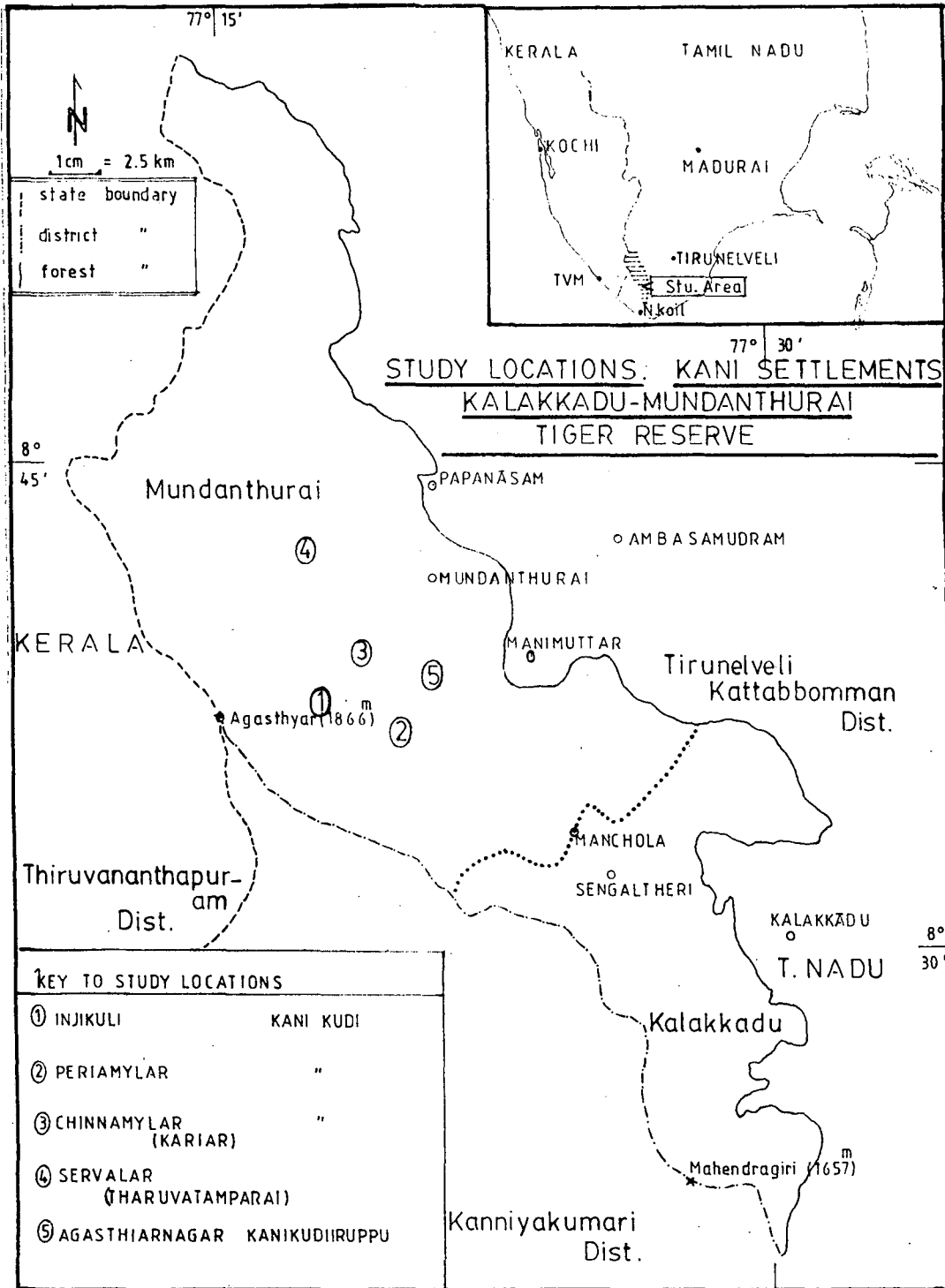
The initial attempts in studying the failure in legitimisation of the claim of exclusive property rights of the forest department in terms of conceptualising just the conflict expressed by communities are found in the works of Gadgil (1985), Agarwal (1986), Shiva (1988), and, Guha and Gadgil (1989). Broadly these works pose the attempts at legitimisation and resistance to them as a dichotomy. These studies regard the establishment of colonial rule as leading to destruction of hitherto self-sufficient village communities. Such an understanding was a reversal of the way officials of the colonial government dealing with forests portrayed village community in India: as inherently hostile to the natural environment and its preservation. These studies have brought to light the link between the peasant practices that existed before the colonial period and conservation of ecology. Gadgil and Guha (1992), for example, claim that the 'prudence' of cultural traditions maintained the system of production without 'major upheavals at the level of village' over long periods in spite of 'turnover of ruling dynasties'. The impression these works give is of a glorious past—a pre-colonial society untouched by baneful commerce and competition for resources. Colonial intervention then becomes an entirely external impact. The change in the mode of resource utilisation effected under colonial rule is considered as coming from above and destroying the equilibrium with ecology of the communities below. The process of marginalisation of the tribal people that is brought to focus in these studies is only during the colonial period when they are portrayed as groups found on the advancing frontier of colonial expansion. The cumulative impact of commercial forestry is seen as resulting in the degradation of isolated areas in which the adivasis lived (Guha and Gadgil 1989). Their analysis, in dichotomising legitimisation of exclusive property rights of the forest department and the resistance to it signify broadly what can be called as the 'impact-response' model. According to this model, the State is a single entity bringing about change in mode of resource-utilisation from above; the community as a single entity from below resists the legitimisation of exclusive property rights of the State. However, as already mentioned, the legitimisation of the State is considered to occur at different levels. Thus, the attempts through which legitimisation are accepted or denied would be parallel to those levels. This would result in the possibility of a continuum of accepting or denying legitimisation attempts by the State. When the specific practices that constitute the legitimisation of the exclusive property rights of the State, and, those of acceptance or resistance of the community are understood, they do not fit neatly into an 'impact response' model (Sivaramakrishnan op cit.).

Here, legitimisation of exclusive property rights and the questioning of it during the change in the mode of resource utilisation by the State could be looked at in terms of the process of statemaking. Change in the mode of resource utilisation requires change in expertise as well as control over output. Change in expertise requires selective dependence on the existing skill; control over output again requires selective reallocation of existing rights. Thus a delicate balance between central direction and local autonomy is attempted in the reallocation of existing rights and skill. The reallocation of existing skills and rights reduce the associated responsibilities and privileges within a community in temporary, unstable and provisional ways. Thus the possibility of questioning the reallocation of the existing rights would change depending on the change in the associated responsibilities and privileges constituting the community. Thus legitimisation and questioning of it cannot be put in terms of a dichotomy but in terms of a continuum in which co-operation along with complicity and conflict are interwoven with resistance.

Thus, 'State is not a free-standing entity located apart from and opposed to another entity called Society' (Mitchell 1991, cited in Sivaramakrishnan 1999). The State is rather a collection of specific institutions with multiple boundaries constituted by differential accessibility for the strategies of individuals in society (Sivaramakrishnan 1999).

The study would thus try to understand the changes in the mode of utilisation of forest resources during the colonial period along with the establishment and legitimisation of exclusive property rights of the forest department over forestland and produce. The incompleteness of the constitution of expertise of the forest department is then brought to focus by taking the empirical example of changes brought about in evergreen and teak forests as well as fire protection. The focus would then be to try to locate the difference in attempts at reallocation of use-rights of adivasis and the ryots in the region by the forest department and, the selective dependence on the existing skills especially of the adivasis for the changes in the administration of forests. Since adivasis were completely dependent on the forests for their sustenance, the changes in the reallocation of their use-rights and the selective dependence on their skills for the changes in forest administration in the post-colonial period is further explored.





### **1.3. Study Area:**

The Kalakad Mundanthurai Tiger Reserve (KMTR) is the southern most Tiger Habitat of the Country and is situated in the southern portion of the Western Ghats of Tirunelveli in Tamil Nadu. The KMTR is bounded by Tenkasi, Naguneri and Ambasamudram Taluks in the North and the East, Kanyakumari District in the South and Kerala State in the West.

There are 5 Kanikkars (adivasis) habitations situated in KMTR, namely, Injikuli, Periya Mylar, China Mylar (AdukkuParai), Servalar (Tharuvatamparai) and AgasthiarNagar Kanikudiirruppu in Ambasamudram Taluk, Tirunelveli District, Tamil Nadu,

There are 365 different species of flora belonging to different families, 67 varieties of Ferns, 11 Pteridophytes, 69 orchids, 39 mammals, 49 reptiles, and 163 birds given as checklist of flora and fauna in the Management Plan of the Reserve (1996).

### **1.4. Chapter Scheme:**

In the next chapter, the change in the administration of forests in India during the colonial period, brought about in the effort to cater to a demand new and different from what the forests had been used in the past and its implications is traced. The changes in the administration of forests in Tinnevely in terms of forming a special department (the forest department) from the revenue department, the changes in the method of regeneration and the changes in the method of working of forest resources are discussed. The exclusive claim of the forest department over forestland and produce thus acquired would be placed in perspective with the change in legitimisation of property rights in terms of changes in the rhetoric of conservation. The maintaining of steady flow of supply of the produce as per the new mode of resource utilisation, specified in terms of routines for the operations of the forest department, working in a context of doing best with available information, is then discussed for the evergreen, teak forests' regeneration and extraction as well as fire protection operations.

The third chapter will try to specifically focus on the reallocation of existing use-rights of the ryots and adivasis. In the case of ryots, the specific example of catering to the demand for fuel and grazing vis-à-vis the demand for fuel for railways is discussed. The assertion of use-rights of the ryots is then discussed with a specific example. In the case of reallocation of use-

rights for adivasis, the selective dependence on their skill becomes important. The next focus would be by taking specific examples from the adivasis' way of using forests, to discuss how they acquire and transfer their situated knowledge about forests. Then the specific ways in which the adivasi skills were put to use in forest operations especially in the regeneration of teak plantations is discussed with the changes in their assertion of use-rights.

The fourth chapter would discuss the changes in the administration of forests in the post-colonial period in the Indian context in terms of changes in demand from the forests from industries, as well as, changes in the demand for preservation. This would help to locate the changes in reallocation of adivasi use-rights and the selective dependence on their skill by the forest department in Tirunelveli. The final chapter would end with a summary and conclusion of the main findings of the study.

## Chapter 2

### Introduction and Legitimation of Property Rights of the Forest Department

#### 2.1. Introduction:

This chapter would discuss the change in the mode of utilisation of forest resources brought about by the British in Tinnevely forest division. This would be contextualised by discussion about the changes that took place in the Indian forests during the colonial period.

The change in the mode of resource utilisation can be discussed in terms of expertise required for handling the new mode of resource utilisation as well as rights over the produce from the forest. In this chapter, we would discuss in section 2.3 how the exclusive property rights over forestland and produce of the forest department was established and legitimised. The establishment of the exclusive property rights over forestland and produce of the forest department simultaneously would be accompanied by changes in the method of regeneration and working of the produce. Subsequent to the discussion of these changes, the expertise of the new mode of resource utilisation modified in the transfer of the general skills about forestry to specific skills in a specific site of application would be discussed in section 2.4 by taking up the case of evergreen, teak regeneration and extraction and the example of fire protection. The data source for the account is the Working Plan of the division (Lasrado, Esq. M.A. IFS, Working Plan for the Tinnevely Cum Ramnad Forest Division: 1934-35 to 1943-44, Government Press, Madras, 1936 (hereafter WP)).

The issue of reallocation of existing use-rights over forests would be taken up in the next chapter. The dependence on the existing skills of forest-use for constituting the expertise for the new mode of resource utilisation will also be taken up then.

The following section of the changes in forests under the colonial administration would contextualise attempts in the Tinnevely division in sustaining steady flow of supply of marketable produce from forests.

## **2.2. Changes in Mode of Forest-resource Utilisation During the Colonial Period:**

In this section, we consider attempts at change in the mode of resource utilisation of forests by the British requiring changes in demarcation, regeneration and method of working.

The allocation of the forest produce in the pre-colonial period was by a network of rights, responsibilities and privileges agreed upon by the community for organising activities of forest use. These networks of rights, responsibilities and privileges though not in the written form could nevertheless specify allocation.

When a legislation sanctioning change in the mode of utilising forest resources was considered by the British, the reallocation of customary usage of forests became debatable. The content of the debate could be put in the form of a continuum. On the one extreme of this continuum, was the consideration of complete extinction of customary usage. On the other, were possibilities for preservation of rights and local institutions. The rest of the debate could be placed between the two. The outcome of the debate, which resulted in the Forest Act of 1878, advocated the exclusive claim of uncultivated land as state's property. Invoking selectively the instances of state monopoly over forests of the pre-colonial rulers legitimised such a claim. Further, such an exclusive claim of property right over forestlands was justified as a gesture of public interest in conservation of forests for maintaining the water catchment of the river system irrigating the revenue district.

The method of exclusion of property rights over forests can be understood from the distinction between rights and privileges suggested by Baden Powell, the chief contributor of the forest act of 1878. Rights, which were existing and aiding allocation cannot be made null and void without compensation; but privileges were always regulated, could be terminated and if allowed, had to be exclusive to the individual. Certain uses of forests as continuation of past practices by village communities were considered by British as with no identifiable sanctioning authority, and therefore, as just privileges. All customary usage therefore became privileges. Let us now come to the question of rights. The rights had to be proven by legal methods and standards common to western literate society. Thus the British administrators did not take into account unwritten forms of common property management of the forests. The role played by the common property management in serving public interest would further be

taken up by the state institutions identified as rational and progressive and thus would better serve public interest.

Apart from the reserved forests, where the state had exclusive property rights, there were protected forests and open forests where the restrictions were less severe. The question of compensation of use-rights, however, was not considered in these cases also. Shifting cultivation of adivasis was one major traditional subsistence activity that was banned from reserved forests. Powell considered the practice of shifting cultivation as temporary and destructive, and therefore as just a privilege. Other rights in the forests were curtailed and regulated. The rights taken into account included: grazing and pasture, grass cutting, lopping boughs and gathering leaves, wood rights, rights to dead and decayed leaves for litter and manure, rights to other forest produce, hunting and fishing.

The change in the mode of resource utilisation that the forest legislation took into account were the demand for forests aiding railway development and the increase in state revenues to meet the financial crisis faced by India's government after 1857. The wood from the forests met the demand for sleepers for railway tracks and fuel for the engine. Railway networking of commerce in India was considered to be the longest in any country. By 1921, it covered over 37,000 miles.

The attempt at establishing exclusive property rights over forestland was to ensure consistent supply of required produce at a maximum rate of yield from the forests. The working plan of a forest was a management tool, which would aid such an end. After estimating the growing stock of the species demanded, the working plan specified when different forest coupes could be felled. This was also by ensuring long term treatment of the produce giving detailed procedures for short-term tending of forests. The producing and tending of forests (silviculture) was basically to aid the transformation of mixed forests into homogeneous stands (monoculture) of commercially valuable species. Sal, teak, and deodar were given priority since they were most important to railways, ship building, and military needs. Research aided replacing marketable species surviving in mixed forests to homogeneous stands of those species, raised and harvested in blocks.

Forest research had to be extended for other purposes too. The commencement of systematic forest research in India can be dated to 1906 when the Imperial Forest Research Institute was

established at Dehradun in northern India. The main branches of this institute were silviculture, zoology, botany, economics, and chemistry. The main lines on which research was organized could be classified in terms of improving the quality of timber and considering substitutes for the existing marketable species. The research on producing and tending of forests carried out in India was to generate homogeneous stands of valuable species in a situation where most of the important timber species (notably teak and sal) did not grow in large homogeneous stands (Joshi 1980). Thus research in forestry mediated the transfer of general skills in forestry to specific skills in a specific site of application for the forest department.

A change in the administration of the forests could thus be seen. Forest settlement, demarcation, surveying and formally constituting state forests; preparation of working plans; construction of roads, bridges, buildings, drainage channels and anicuts became important in all divisions. Protection of forest produce against fire, cattle, and natural calamities was attempted. Exploitation and artificial regeneration were mainly for major produce (timber), and minor produce of commercial value (lac, bamboo, leaves, nuts and fruits). The specialisation required for the tasks of administration needed changes in the administrative structure. An empirical context can indicate this change. By 1920, the Forest Service consisted of three branches: the Imperial Forest Service (399 officers) recruited in Britain and trained at Oxford, Cambridge, and Edinburgh; the provincial forest service (293 officers), recruited and trained in India at Dehradun; and the Subordinate Forest Service, comprising over 15,000 rangers, deputy rangers, and guards recruited and trained in the provinces. Such training could be understood in terms of exposure to skills from different contexts of administering forests to aid the application to the particular context in which these trainees would be appointed.

Thus we find different factors shaping the way change in the mode of resource utilization of forests could be achieved by the British. First, the shift from common property management of forests to exclusive property rights for the state was mediated by the distinction between privileges and rights in the forest legislation. Secondly, the shift from mixed forests to homogeneous stands of commercial species of timber was mediated by ongoing experiments in the demarcated areas. And finally, the shift in administration requiring specialized training for the general skills in forestry was inevitable. In this context of overall changes, the

following section would attempt tracing the changes in Tinnevely division in the Madras Presidency.

### **2.3. Attempts to Sustain Steady Flow of Supply for the New Mode of Forest Resource Utilisation in Tinnevely<sup>1</sup>:**

In this section, the changes in demarcation, regeneration and extraction of forests with the changes in the knowledge acquired about forests in Tinnevely between 1801 and 1887 are discussed. These changes can be broadly put in terms of changes in property rights over forest land and produce to maintain steady flow of supply. These changes in property rights followed the changes in the rules of administering forests. The changes in the period considered include: when the forests were under the administration of the East India Company between 1801 and 1854; when uniform rules for administering forests were considered during the direct British rule between 1854 and 1865; when forests were administered after demarcation between revenue department and the special department (forest department) between 1865 and 1882; when extraction and regeneration was completely specified in the working plan of the forest department between 1882 and 1887. Accompanying these changes are the changes in the way property rights over forest lands and produce of the forest department is legitimised in each period.

#### ***2.3.1. Changes in the Property Rights over Forest Land and Produce:***

We will start by considering the changes in the property rights over forest land and produce till exclusive rights over certain land ('reserved forests') and its produce were recommended by Brandis in 1882. Such an exclusive control was followed by attempts at reallocation of use-rights of ryots for fuel, grazing and timber, which were existing.

When the forests were under the administration of the East India Company, the property rights was over selective forest produce. This was evident from 'tree tax' being charged on the usufruct of palmyras and some 38 kinds of trees including teak, rosewood, mango, jack, *Bassia latifolia*, tamarind, soap nut and marking nuts tree. Further, the Company had the right over timber of these trees. Certain 'valuable' trees in the forests could be extracted only after payment of their value to the Tahsildar. Further property rights over small timber for house-building and

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<sup>1</sup> WP, p.48-60



fuel was transferred to contractors on payment of 'hill rents'. A distinction of hill tribes' use of forest produce was not taken into account while leasing out the forest produce to the contractors. The 'hill rents' however, was discontinued from 1854 by Company's Order because 'the hill tribes were oppressed by lessees'. The 'pattadars' (ryots), who paid rent for agriculture land to the Company, however, had use-rights over wood for agricultural implements and, a head-load of fuel for domestic consumption of each ryot. They were also allowed to clear forest lands for agricultural purposes.

The 'valuable' trees in the Government Forests were specified as per the Jungle Conservancy Rules in 1860. They were defined in terms of

- i. trees beyond a particular size: trees having a circumference greater than 3' and are above 2' from ground level
- ii. trees 'reserved' for the value of their wood<sup>2</sup> and those 'reserved' for the value of their products<sup>3</sup>

The use-rights of ryots for bonafide domestic consumption were to be within low jungles and brushwood without taxation. The wood for consumption of sale was allowed after payment of required rents. Charcoal burners, assigned trees not belonging to 'valuable' trees, had to pay a seigniorage of 1 anna per basket per piled para, which was a standard measure then. Similarly for fuel and bamboos' extraction for sale, the seigniorage collected was: 5 annas per cartload, 1 anna per bullock load, 3 pies per head load. Timber for sale again required a seigniorage of Re.1 /- per cartload.

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<sup>2</sup> The trees 'reserved' for the value of their wood were--

1. Ebony
2. Satinwood
3. Teak
4. Rosewood
5. Palmyra
6. Jack
7. Artocarpus hirsuta
8. Terminalia bellerica
9. Terminalia paniculata
10. Acacia arabica
11. Albizzia lebbek
12. Acacia catechu
13. Hardwickia binata

<sup>3</sup> The trees reserved for the value of their products were--

1. Anona squamosa
2. Psidium guava
3. Sapindus emarginatus
4. Bassia latifolia
5. Anacardium occidentale
6. Acacia concinna
7. Tamarindus indicus
8. Calophyllum inophyllum
9. Strychnos potatorum
10. Mallotus philippinensis

Following the restriction of use-rights of ryots to low jungles and brushwoods, the next delineation was the property rights over forest land under the special department created in 1864 (the forest department) from that under the revenue department. Four different ways of negotiating with the claim of private property status by no less than ten zamindars over nearly half the forest area of the division in various parts of the ghauts was made<sup>4</sup>.

- a) The claim over the Kalakad Forests by the Tirukurangudi Mutt was disapproved by the High Court and transferred to the Government.
- b) The second case was the claim of the Singampatti Zamindar, who did not approve of the new reservation policy of the Government. The area commanded was the upper reaches of the river Tambraparani and the source of a number of the streams of this important river and therefore considered important for forest administration. The case was taken to the High Court but the Zamindar won.
- c) The third case was of Kattalaimalai Estate in Papanasam Reserve claimed by Chokkampatti Zamindar and was part of the catchment area of Tambraparani and one of its principal affluent, the Kariar. In 1876, it was abandoned. The department, which had tried to acquire it, lost it in 1893 to a Roman Catholic Mission in court auction who acquired it for Rs.17, 000 /-.
- d) The fourth case were the claims of other zamindars Chokkampatti, Sivagiri, Vairavankulam and Tirumalainaicken Pudukkudi, which were less important from the point of view of irrigation and no attempt was made to contest and secure.

The question of jurisdiction between the revenue department and the forest department that was created to handle problems of working and regeneration of forests was settled as follows: the whole of forests in Nanguneri Range and areas of the Papanasam not claimed by Zamindars were brought under the Conservancy Rules, and, thus under the revenue department. North of Kuttalam, the Vasudevanallur and Watrap Forests, over which no private rights were asserted, were placed under an Overseer of the special department. The necessity of all forests to be under the forest department for 'efficient' administration was suggested by the then Collector Puckle and was realised in 1866.

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<sup>4</sup> The difference in the ways was mainly associated with the problem of maintaining the ownership status of the Zamins by payment of land-rent to the Government, and, the importance of the location of the Zamins in terms of addressing the issue raised in the conservation rhetoric--to sustain irrigation.

Delineation of areas under the Forest Department was debated in terms of whether partial or total restriction for accessibility to <sup>local</sup> demand would be preferable. The experiment for such a purpose was done in Tenkasi Taluk when Collector Puckle marked off clearly a 'cairns<sup>5</sup> line': the slopes lower to which were allocated for felling and grazing and called 'village forests'; and, those above, the produce over which the forest department had exclusive rights and thus to be prohibited from free removals, excluded from grazing and fire was called 'reserve forest'. To extend such exclusive property rights in all taluks and to fix the role of Government on subsequent forest policy, a Forest Committee was formed in 1878. Their recommendations may be summarised as follows:

- a) The division between reserved and communal forests was accepted as a governing strategy. The 'cairns line' was accordingly extended in the ghaut forests of all taluks.
- b) The whole reserved forest of the district was divided into 7 blocks as follows :

Table 2.3.1. Area of Reserved Forests in Tinnevely Division:

<i>Taluk</i>	<i>Number of blocks</i>	<i>Area of Blocks sq.miles</i>	<i>Total forest area sq.miles</i>
Nanguneri	1	49.27	89.45
Ambasamudram	1	142.20	238.85
Tenkasi	3	28.14	53.19
Sankaranainarkoil	1	30.84	78.83
Srivilliputtur	1	36.36	98.87
Total		286.81	559.19

Source: WP, p.55

- c. No fresh pattas were to be granted in the ghaut forests. The property rights between forest lands and agriculture lands was thus made permanent.
- d. Control of grazing through payment was to be made a practice in the reserved forests with a claim that no rights of grazing existed in these areas.
- e. Grazing rights in small portion of the communal forests had to be foregone in turns to aid regeneration and improvement. Safeguards against fire and other damage as might be decided upon by the Collector and District Forest Officer was important in permitting grazing even in the open areas.
- f. The forest department would specify the administration of private forests

<sup>5</sup> Cairn : a mound of rough stones built as a monument or landmark

The Forest Committee's recommendations seem to follow the earlier suggestions for exclusive rights over forest produce within the delineated area of the forest department. The exclusive rights could be maintained by attempts at reallocation of ryots' cultivable land and grazing within limits defined for each village. The exclusive property rights over forestland and produce of the forest department was an important change. The specification of administration in private forests, which were again considered as required for conservation, was another notable change. The Government accepted the proposal of the committee; action on it followed the Madras Forest Act of 1882.

Some changes were brought about in the Forest Committee's recommendations when Dr.Brandis visited the division in February 1882.

- i. Land alienation allowed for only Coffee cultivation as per the Forest Committee's recommendations had to be dropped.
- ii. The whole area above the outer line laid down by the Revenue Survey as the limit of cultivable land was to be reserved under Forest Act if it was at the disposal of Government. The category of communal forests was thus obliterated.
- iii. The requirement of villagers was to be met from wastelands within revenue survey limit. If that was not possible then free pasture and cutting of fuel and small timber for agriculture implements was to be restricted to those areas which were outside the blocks set apart for fire protection.
- iv. Fire lines had to be cleared and burnt around selected blocks of the more valuable forests. Private enclosures were to be demarcated and the owners were to keep them clear of fire. Steps to keep fire off the produce under the exclusive property rights of the special department had to be taken.

Thus starting with the property rights over selective produce, we find a change towards exclusive property rights over land and over produce reserved under the forest department. The use-rights allowed earlier basically for domestic consumption of the ryots were attempted reallocation in the remaining forest and wastelands along with fuel required for railways. These attempts did not replace the way common property management was in practice earlier. The incomplete reallocation of use-rights led to questioning the exclusive property rights of the forest department over forestland and produce. The issues relating to that will be taken up in the next chapter.

### *2.3.2. Changes in the Attempts at Regeneration of the Forests:*

The attempt at establishing exclusive property rights over forestland and produce is just a beginning in the process of ensuring steady flow of supply from the forests. Changes in the attempts at regeneration would aid concretising the process.

The early attempts at regeneration (between 1854 and 1865) was by the maintenance and creation of plantations using jungle conservancy fund from the revenue collected as seigniorage for the extraction of fuel, bamboo and timber for sale. The problem of regeneration in this case had been attributed partly to insufficiency of funds, partly to lack of knowledge of methods of regeneration and also in the 'apathy and indifference of the villagers' in their vision about the requirements in the future.

The exclusive control of forestlands and produce led to a shift in regeneration from mixed forests to homogeneous stands of required species. This required first of all knowledge about the regeneration of the species considered. The dependence on local knowledge for the purpose thus became evident. The role grazing and fire played in regeneration of the mixed forests was not taken into account during the consideration of the process of regeneration of the homogeneous stands. The protection of the produce from fire and grazing considered as a requirement for the steady flow of required output from the forests was again considered debatable. Attempts at artificial regeneration along with promoting natural regeneration of required species also became important.

For regeneration to be brought in practice in forests that were reserved, inventory of the entire produce in the area was attempted. Regeneration of selective commercial species was attempted. Better maps of the area were to be made for further facilitating administration. Such mechanisms to facilitate a different administration had as its assumption centralised investment for the possibility of generating standard information about the forests and specialised work-sharing in terms of ramifications of the administrative structure. These led to the formation of the general skills of the forest department.

### *2.3.3. Changes in the Method of Working:*

When the property rights over forestland and produce became exclusive for the forest department in the reserve forests, regeneration of homogeneous stands of marketable species was attempted. This required a concomitant change in method of extracting the produce.

Before such exclusive rights over land and produce was established, the license and voucher system for all removals from the forests was the method of working. The payment of seigniorage was to be done to the village-head. The village-head was to obtain a commission of 20 per cent of the collections. The 'misappropriation' of village-head<sup>6</sup> and, the evasion of fee payment or unauthorised cutting<sup>7</sup>, were to be checked through appropriate legal mechanisms. The forests in which such a system of working could work were mixed forests where trees considered valuable alone would be monitored.

When the shift from mixed forests to homogeneous stands of marketable species was to be arrived at, tracts were to be marked off for subsequent working under special protection. Such specially protected areas were to be worked under selection felling by compartments and sub compartments. According to the method of selection felling, all mature and badly grown trees of all species were extracted and natural regeneration of the better species was carefully tended. Valuation surveys of the crop on which simple working plans were to be based were also ordered. The only maps that were available as continuation of past practices were those prepared by the Forest Committee containing no topographical details. These were ordered to be corrected and added to by the staff. Timber transit rules were drafted and made applicable to the ghaut forests.

But the license and voucher system may not be suitable in a context in which regeneration of homogenous species in regeneration blocks were to be attempted. The license and voucher system of removals seemed to suit more the working of mixed forests and clearing of the forests for replacement with marketable species. As per this system, Permit gumastars were instituted; checking stations were established and additional watchmen and forest guards were employed to control and supervise removals. The shift to homogeneous stands of marketable

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<sup>6</sup> punishable under IX of Act 1822

<sup>7</sup> punishable under Penal Code under Fraud and Trespass

species led to the problem of monitoring hundreds of people entering the forest daily as per this system. It further required numerous issuing and recovering officers to collect the fees, who again can default. Thus the new mode of resource utilisation required departmental working or agency of responsible contractors. This further required reallocation of work of the staff in terms of organisation and distribution of establishments, fire protection of selected blocks and collection of revenue to meet such ends. Thus, in 1888 unrestricted entry and felling on permits had ceased and been replaced by regular felling by the department from annual coupes. Even persons permitted to remove headloads of dead wood were required to remove them from annual coupes.

#### ***2.3.4. Changes in Legitimisation of Exclusive Property Rights over Forest Land and Produce:***

The British forestry historians justified exclusive property rights over forest land and produce, (which attempted production of woodmass that the British could employ for various purposes) in terms of the rhetoric of conservation of forests. Ribbentrop (1900), for example, considered the establishment of scientific forestry by the British as signifying the end of 'a war on the forests' (cited in Rangarajan (1994)). Stebbing (1921) considered it as the scientific supervision and control of private interests. Such attempts can be located in the debate of the rhetoric on conservation between Groove and Guha about the role it played in organising forestry as discussed by Rangarajan (op cit.). He summarizes Guha (1983) as claiming that the practices of colonial forestry were motivated by revenue and strategic needs of the empire. Groove (1988) brings in the importance of ideological issues and, the debates between colonial administrators, as having their own role to play. Rangarajan feels that in terms of form the two essays are of different periods in forestry history; in terms of content the debate is about the importance of material or ideological interests as playing the determining role in the establishment of 'scientific forestry'. Such an 'either or' situation is not resolvable, specifically because the history of colonialism in itself is no more seen in such a way. The importance of conservation in maintaining watershed of rivers felt by the early nineteenth century administrators was because of the autonomy of individual experts in a context of institutions of British forestry in India just getting formed. However, such conservation rhetoric later was used against the 'shifting cultivators' for example, when meeting the demand for timber and when forest administration in India became more clearly specified (Rangarajan op cit.). The change in the idea of 'progress' is the connecting link

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between the two uses for which the conservation rhetoric was employed (Sivaramakrishnan 2000).

The changes in the conservation rhetoric used in the Tinnevely division include the failure of the earlier rulers in maintaining forests, forests as infested with 'robbers' and therefore dangerous for security of people, 'apathy and indifference' of the forest-dependent communities in not participating in the process of regenerating plantations for the future. These legitimisation occurred when administration was in terms of maintaining the property rights over selective produce in the forest lands. When the exclusive rights over forest land and produce implying control over administration of regeneration and extraction was to be legitimised, the requirement of maintaining the water-catchment area of rivers which irrigate the cultivable land in the revenue district, trees reducing the damage due to flood in Tinnevely in 1877 to Rupees 1.5 lakhs, controlling fire which is considered a biotic interference were brought in. The changes in the content of the rhetoric are in terms of the increasing information about the forests, which has a close link with the change in the control over the administration of the forests. The continuum of the change can be in terms of starting with a first survey of the forests in an area on the one end and, the fire protection of species regenerated in a particular site of application, which is reserved for the purpose, on the other end.

The changes in demarcation, regeneration, method of working and legitimisation of the control over administration of the forests occurred when the forests underwent changes in terms of mixed forests 'naturally' regenerating to homogeneous stands of marketable species of evergreen and deciduous varieties, with forest department's attempt at sustaining maximum annual yield at the quickest time. The parallel change that took place was the change in the standardisation of measure of the produce: from headload, cartload etc. to measurement in terms of cubic feet to sale in terms of homogeneous species of trees with certain physical specification.

#### **2.4. The Transfer of General Skills to Specific Skills of the Forest Department (the Situated Knowledge of the Forest Department):**

The changes in the demarcation, regeneration, and method of working of forests that came about with the change in the mode of resource utilisation of forests expressed itself in the



form of a management tool--the working plan. The working plan was basically a kind of policy document, which would specify details of how regeneration and extraction of forest resources had to be carried out. The objectives of the working plan can be broadly summarised as sustaining supply by working areas in the principles of a sustained yield. Introduced from 1895, there were 27 working circles in the different ranges covering 1,59,497 acres till 1916. The data required for the preparation of the policy were with categories that had to cater to the following objectives:

- a) to ensure the extension of evergreen and semi-deciduous produce contributing to the preservation of water resources by protection.
- b) to regularise in a simple manner the exploitation of timber in the evergreen forests and the higher semi-deciduous forests.
- c) to control grazing.
- d) capital expenditure on roads and buildings with a view to the future development of the forests.
- e) to supply neighbouring population small timber, fuel and charcoal on the principle of a sustained annual yield.

The motivation behind the policy thus was to make the forests more accessible and workable to aid extraction of evergreen and higher semi-deciduous produce with attempts at reallocation of demand of neighbouring population for small timber, fuel and charcoal to areas with sustained annual yield. Grazing required allocation from November to May in the compartments in the lower slopes and their corresponding hill compartments between June and October.

The categories which went into the formation of policy were never complete because of specificity of the forest land from which regeneration and extraction was attempted and the problem of allocating the specific demand of the neighbouring population for timber, fuel and grazing. This could be seen in the way method of working the evergreen and deciduous forests being different for each range. In the case of evergreen forests, though the average annual sustained yield from the entire area could be maintained, the differences in specific areas compared to the requirement of sustained yield in that area was varying creating uncertainties about the expected supply from these areas. In the case of deciduous forests we find the method of working varying in each range with combinations of departmental, contractual and license and voucher system depending upon the produce, transit facilities and

the demand, though the ideal expectation in terms of cost-effectiveness was allowing the contractors to do the felling and extraction themselves.

The case of evergreen and teak extraction and regeneration in a context in which policy could not predetermine the outcome because of the specificity of the area will be discussed in the following subsections. This will be followed by the way fire protection of the produce was undergoing change. These changes could be put in the form of the transfer of the general skills of forestry into specific skills of administering forests in a particular site of application. The dependence on the existing skill in dealing with forests for the constitution of expertise of the new mode of resource utilisation thus follows.

#### **2.4.1. Extraction and Regeneration of Evergreen Forests <sup>8</sup>:**

The attempt at converting the mixed species of evergreen forests into homogenous stands of species that had a market, pass through different stages, between 1920 and 1925. The problem of such a conversion was in obtaining an annual yield by retaining a 'marketable' composition for maintaining the water catchment of the river system as invoked in the conservation rhetoric. Regeneration, because of lack of silvicultural knowledge of the species, and inaccessibility in these areas was the problem<sup>9</sup> to be addressed. The first attempt was an experiment at regeneration, which was suspected for its extension to all areas. An enumeration of species for estimating the quantity of timber was done following a demand for softwood in Europe. To address the problem of regeneration, the next enumeration categorised the species into 3 broad varieties--Type A, Type B and Type C--out of which Type A and B were considered as marketable. The electric lumbering suggested as profitable from the enumeration results was dropped and possibility of accessing the intractable areas by laying down paths and rest houses for labourers working was attempted. A special officer in charge of the Kannikatty and Kodamadi evergreen forests created for improving communications and enumeration led to further estimation; and, lumbering suggested, was dropped to consider working small areas of the forests for railway sleepers and kolmarams with suitable regeneration measures. The departmental working began with 50 acres in 1928 and later was given for contractual working though at low prices. These attempts can be

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<sup>8</sup> WP, p.60-64

<sup>9</sup> The knowledge of evergreen species of the Kanikkars and the possibilities of accessibility they aided acquires importance here.

further summarized as possibilities for the transfer of general skills of forestry to specific skills of administering the evergreen forests in the specific site of application.

The general skills of forestry that informed the initial attempts of utilization and proper treatment were the conversion of mixed evergreen forests into areas with just marketable species--to get rid of those species considered qualitatively different as per the information available at that time (improvement felling). The comparative inaccessibility was a problem here. The regeneration of marketable species was considered as possible by retaining 'valuable' trees even if they were overmature, along with getting rid of non-marketable species. The conversion however, was hampered by the knowledge required for the regeneration of marketable species in the areas cleared of non-marketable species. This was especially in a context when exclusive rights over administration of forests was legitimised by evergreen forests preserving water catchment areas of rivers irrigating the agricultural land.

A potential demand for the evergreen species came with A.W.Lushington's scheme for supplying wood to Europe for re-building the areas in France and Belgium devastated by what was considered as the Great European War between 1914 and 1918. D.T.Barry, the District Forest Officer, did the experiment in the working strategy by regenerating in small areas at Kannikatty and Kodamadi, even-aged crops of Hopea and Balanocarpus. These were girdled by 'valueless species' overlapping such regeneration. This strategy of the transfer of the general skills to specific skills of administration was considered expensive, non-sustainable at a larger scale and the 'valueless species' overlapping as having a probability of damaging the evergreen species.

The next attempt that was tried was informed by the general skills of replacing completely the existing growth and attempting regeneration of the marketable species. Such a proposal to work these forests by A.W.Lushington did not however, address techniques of regeneration. To estimate the supply, sample enumerations were conducted in 'fairly representative' forest at Kodamadi and Kannikatty, for the purpose, all trees below 18 inches in diameter being excluded leading to the following estimation:

Table 2.4.1: Estimation of Yield of Evergreen Forests.

	<i>Timber Yield Per Acre (in Tons)</i>
Kodamadi (average type)	49
Kannikatti (average type)	76
Kannikatti (good type)	169

*N.B.: the form factor was assumed to be 0.50 and 50 cubic feet was considered equivalent to one ton.  
Source: WP, p.61*

In addition to the above-accepted estimation, the small wood and branch wood out-turn which could be converted into fuel or charcoal was expected to double the yield.

Method of working and regeneration was then worked out accordingly. Lushington advanced proposals for working through electric lumbering. Electricity for the working could be obtained from the 600 feet waterfall at Kuttalam kalaruvi. The fuel demand in the division was 200,000 tons per annum and thus there was expected no difficulty in marketing of fuel obtained from annual evergreen coupe at a profit. Regeneration was to be in terms of the introduction of teak with an evergreen undergrowth of Hopea in suitable places, while in others, mixtures of Hopea, Balanocarpus, Cedrela toona, Vitex altissima, Filicum decipiens in the Lower Slopes and, above 2500 feet, where 'true' evergreens came in, Gluta travancorica, Mesua ferrea, Dysoxylon malabaricum, Diospyros assimilis and Aglaia roxburghiana were to be introduced. An investigation of the project by the newly constituted Forest Engineering Branch as per the order by the Chief Conservator in his proceedings No.71, dated 15th September 1920, was considered appropriate as the exploitation suggested in the proposal seemed more a problem for engineer than for the forest officer.

The issue for the forest department remained the generalisability of the estimation. Thus, improving accessibility of the forests and monitoring standardisation of the information collected in terms of what constitutes marketable species and the best method of regenerating was the next general skills focussed. For such purposes,

- (i) the forests were to be made accessible by the construction of a network of bridle paths on a gradient which would make their ultimate conversion into cart-tracts an easy matter.
- (ii) Rest houses and coolie lines to comfortably house staff and labour when doing work in these inhospitable regions.

(iii) to divide Ambasamudram Range into two Ranges--Kannikatty and Kodamadi--to provide a special officer to be in charge of the development of communications in and the stock mapping of the evergreen sholas in the new region.

Thus, the shift was from extraction by estimation of supply to improving communications for extraction and estimation. Lemos, the special officer who took charge, stock-mapped nearly 65 square miles of evergreen forest into the following classes:

Table 2.4.2: Classification of Evergreen Forests and the Acreage:

<i>Type--</i>	<i>Area</i>
A. Pure evergreen	20 square miles
B. Semi evergreen	10 square miles
C. Deciduous	2 square miles
D. Reed area with a sprinkling of tree gr.	33 square miles

Source: WP, p.61

Types A and B alone were considered exploitable, and enumeration was carried out along some of the paths, over an aggregate area of 228 acres. Type A forest was estimated to be 100 tons of timber and 100 tons of fuel per acre, and in Type B forest about 50 tons of timber and 50 tons of fuel per acre. The capital value of the forest was estimated as:

Table 2.4.3: Estimation of Yield of Evergreen Forests as per Type A and Type B:

	<i>Timber Tons</i>	<i>Fuel Tons</i>
20 square miles of Type A forest would yield	1,280,000	1,280,000
10 square miles of Type B forest would yield	320,000	320,000
Total	1,600,000	1,600,000

Source: WP, p.62

The timber was valued at 8 annas per cubic foot or Rs.25 per ton of 50 cubic feet and fuel at 4 annas per ton leading to the estimation to be worth of 40 million rupees and the fuel 4 lakhs. Such an estimation led the Chief Forest Engineer, Martin, an expert on American logging methods, to propose a large scheme to be financed on a direct development loan. The project was to consist of a railway from Ambur on the plains to Mundanthorai and ultimately to Kodamadi; an investment in the latest logging machinery, flumes, ropeways, tractors, etc., and the erection of a sawmill at Mundanthorai. He proposed a capital outlay of Rs.25, 00,000 /- and estimated an annual return on investment as Rs.6, 75,000 /-, a return of about 27 per cent on the outlay. Martin however, felt the need for the collection of more complete data and

the preparation of detailed estimates based on actual surveys and enumeration, before proceeding further with the scheme.

Meanwhile, the task of opening up the forests and carrying out enumeration of the growing stock by the forest department proceeded quickly under the special staff sanctioned. By 1923, 75 miles of inspection paths were constructed and 50% of the enumeration was conducted over a total area of 2,640 acres. Such estimation following the improvement in accessibility led to the arrival of the specific method of working of evergreen forests. In 1927, as a result of the joint inspection of the evergreen forests by the Chief Conservator, the Territorial Conservator and the Working Plans Conservator, the following tentative conclusions as to the best method of treatment were arrived at:

- a. to make revenue by selection fellings and hand-sawing of railway sleepers and kolmarams (scantlings)
- b. to tend, especially by climber cutting, such advance growth as was present and very gradually to open the cover by fellings which were to vary in degree from place to place according to the size and state of the advance growth present
- c. to increase the proportion of valuable species by planting where the advance growth was insufficient

Accordingly a special officer was appointed to work under the direct orders of the District Forest Officer and under the supervision of the Working Plans and Territorial Conservators. This administrative requirement was to monitor the estimation of cost involved in extraction and regeneration. He was to select an area not more than 100 acres in the Mesua trees' zone at Kannikatty and conduct light fellings with a girth limit of 7 feet for the purpose. The felled trees were to be hand sawn--the Mesua into sleepers and the other species into appropriate-sized scantlings. These were to be human-handled to the nearest cart-track. The statistics of cost and revenue was to be kept. The climbers were to be cut to advance growth of valuable species by giving it requisite light. A nursery of more valuable evergreen species was to be formed and plants from it were to be underplanted where advance growth was absent or insufficient. Direct sowing in demarcated plots from seeds selected from mother trees was suggested as additional method for regeneration.

Such experiment aiding standardisation of cost and regeneration led in 1928 for the first evergreen coupe of 61 acres at Kannikatty to be worked departmentally. Some 8,000 cubic

feet of timber was extracted at a total cost of Rs.8,990 /- excluding overheads and a net revenue of Rs.440 /- or about Rs. 7-3-0 per acre obtained. Standardisation in exploitation was arrived in 1928 and 1929 when carried out by the special officer Kesava Vittal. From 1930 onwards, the district staff conducted all operations. There were differences in the net revenue obtained from different management of the evergreen forests; these were partially due to the fact that in the earlier years the exploitation work had to be newly organised and hence higher rates had to be paid.

The results of the departmental operations showed that extraction could be undertaken resulting in revenue, which would more than cover the cost of regeneration operations. Silviculturally it demonstrated that it was not desirable to fell more than 3 trees on any one acre, as heavier felling made too big gaps in the canopy (not conducive to the preservation of the character of these evergreen forests in maintaining the catchment area of the rivers (as indicated in the conservation rhetoric)). The coupes selected were considered to be from the best areas only.

The success of departmental working in obtaining revenue higher than the cost involved encouraged local contractors in 1932 to come forward and purchase standing trees in the annual coupe but the bids was considered very disappointing as it was a new enterprise. The result of working through contract agency were:

Table 2.4.4: Price and Number of Trees Worked by Contract Agency in Different Evergreen Coupes

<i>Locality of Working</i>	<i>Year</i>	<i>Coupes</i>	<i>Area in acres</i>	<i>Number of trees marked</i>	<i>Price obtained (Rs.)</i>
Kannikatty	1932	IV	57	151	800
Kodamadi	1932	I	47	159	1300
Sengalteri	1932	I	33	100	725
Kannikatty	1933	V	66	138	862.5

Source: WP, p.64

Thus, an average revenue of Rs.18-12-0 per acre and Rs.6-11-0 per tree sold was obtained. The expectation of better prices was considered to be not possible until such time the working of the evergreen forests was better understood locally and the contract agencies become competitive enough, as at that time only two or three timber merchants were present. The governing strategy to achieve such an end was by improving communications, diminishing unnecessary friction between the contractor and the subordinate staff and providing

professional advise and aiding sales promotion of the produce of the contractor by the District Forest Officer.

In the interest of 'forest conservation', the changes expected from the neighbouring population with the standardisation of working and regeneration of evergreen trees was standardisation of the grazing incidence. Enhancing the grazing fees from 3 annas to 8 annas a cow unit, which began in 1916, could achieve such an end<sup>10</sup>.

Beginning with the standardisation of estimation arrived at by improving accessibility in evergreen forests, we find the shift towards standardisation of working and regeneration being arrived at by giving importance to cost effectiveness and the role of these forests in maintaining water catchment as invoked in the conservation rhetoric. The standardisation of grazing practice of the neighbouring population identified as disturbing the regeneration was by increasing the cost of accessibility. The revenue obtainable from the sale by the forest department being higher than the cost involved led contractors to do the working; their bidding was to be further improved by the promotion of sale at better prices by the district forest officers. The standardisations involved in the process of working and regeneration delineate the contours of the specific skills required for the operation. Such delineation required centralised investment for research in marketable evergreen species extraction and regeneration. The content of the specific skills would depend on the specificity of working and regeneration conditions in each site of application. The delicate balance between central direction and local autonomy thus would decide the content of the specific skills of each operation in a particular site of application.

#### ***2.4.2. Regeneration of Teak Plantations<sup>11</sup>:***

Working Plans tried to prescribe routines for sustained annual yield of fuel, grass and timber. The yield again was supposed to maintain uniform quality standards. This was because working plans became important in a context in which shift from Departmental working to

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<sup>10</sup>The dates from which the enhanced fees came into force in the various ranges :  
Kuttalam, B.P.No.148, Miscellaneous, dated 9th May 1917  
Nanguneri, B.P.No.242, Miscellaneous, dated 20th June 1918  
Ambasamudram, B.P.No.273, Miscellaneous, dated 9th June 1919  
Srivilliputtur, Chief Conservator's proceedings Mis. No.221, dated 27<sup>th</sup> July 1921. Srivaikuntam, G.O.No.1993, Mis., Development, dated 30th October 1930

<sup>11</sup> WP, p.77,78



contractors taking up the whole extraction and selling of the produce occurred. The sale of timber was again no more in terms of cubic feet but in terms of the produce, which was standing. The attempts at regeneration of teak plantations as per the specification of the working plan in a context in which complete information was not available--the transfer of the general skills for the formation of the specific skills of regenerating in a site of application is discussed in this section.

The earliest teak plantation in the division was made about 1888 in two patches, one near the Athithondu rest-house and the other about half a mile away in the Valaikulam Fuel Series. With no information about the earliest teak plantations, the next focus was experimentation by Richmond, a District Forest Officer with a small plantation of 0.91 acres at Kariar in 1907 in the semi-evergreen forests for teak. The routines of regeneration in the area were found to be fit; the succeeding District Forest Officers attempted to plant this species on a large scale in similar areas. The additional element was enlisting the labour of the adivasi Kanikkars (Kanis) in forming such plantations between 1912 and 1915 at Kariar under the 'ponam' system i.e., in conjunction with their field crops. The problem of tackling labour was thus getting settled. The 1912 plantation at Kariar in particular although considered small--4.5 acres in extent--was considered an unqualified success in using the labour of Kanis affirming the possibility of using such a system in the district. From 1917 onwards, teak plantations were started in the Serviar valley near Kodamadi. In 1934-35, there were some 260 acres of teak plantations in Kariar and Serviar valleys.

There were problems of sustaining the seedlings of teak in the area. The earliest departmental plantations were made by transplanting seedlings from a nursery, early in north-east monsoon i.e. October - November. In 1917, a departure from that procedure was effected, seedlings being transplanted in July during south-west monsoon. In the Kariar and Serviar valleys, where Richmond considered the soil suitable after a successful experiment, the south-west monsoon was considered to appear in late May or early June, and was preceded by three months of hot and dry weather. The raising of seedlings in a nursery was considered problematic in terms of providing water and shade. The supply of the seedlings for transplanting during the south-west monsoon was thus considered unreliable. The north-east monsoon was considered unpredictable--arriving anytime between the last week of October and the first week of December--but brought greater amount of rainfall. Seedlings for transplanting during the north-east monsoon can be raised during the preceding south-west

monsoon; but when the seedlings were about to be established they were considered to be subjected to drought from February to early May. Casualties were therefore considered excessive.

There were also problems in terms of the supply of seedlings as the nursery could provide them only as and when available leading to transplanting occurring for a long stretch of period from July to November. This was occurring in pits of 1 foot cube at an espacement of 6 feet by 6 feet. In 1917, 66 % didnot regenerate. Dibbling of teak was resorted to reduce the replacement by dependence on nursery transplants alone. A combination of these 2 methods was adopted in all plantations up to 1925. In 1922, a small experiment in stump planting one-year-old teak stumps over an area of 3 acres in that year's plantation was done during north-east monsoon. The growth was considered not so favourable as the seedlings planted during south-west monsoon. Thus it was considered that stump planting as soon as the south-west monsoon bursted or if the ground was acceptable enough, a few weeks earlier, seemed the most suitable method of planting possible. The reserve of food material in the stump was considered to enable it to tide over rainless periods of short duration; the planting again was done in such a way as to enable the tapping of moisture levels of the soil below. The 1932 teak plantation at Kariar and Kodamadi was considered successful because of stump planting though the work was considered as not organised to take advantage of the rains of the south-west monsoon. It was thereby considered essential for success and reducing the costs of weeding and replacing casualties, to stump-plant as soon as the soil was acceptable enough to receive the stump. Hence burning and staking operations were decided to be completed by the middle of April at the latest. The actual planting was also decided to be so organised that it was completed over the whole area in as short a time as possible to avoid failure otherwise.

There were again problems because of creepers and other softwood species affecting the quality of the produce. This occurred because of the plantations being left as such once it had been successfully established. It was considered that much suppression by creeper growth and fast growing soft wood species such as *Helicteres isora*, *Trema orientalis*, *Sterculia* sp., *Grewia* sp., *Pterospermum* sp., had occurred. The 1913 and 1914 Kani plantations contain huge *Terminalia arjuna* trees over 4 feet in girth which were considered to have done immense damage to the teak. Another problem of leaving the plantations as such was the boundaries between the various plantations were considered to have been overgrown as to be

practically unrecognizable, thus increasing the difficulties of making thinnings. A regular scheme of thinnings and cleanings thereafter became a practice.

There were problems with the way the labour of the Kanis was used for the teak plantations—by allowing them to grow their food and cash crops alongside. The problem was food and cash crops allowed to be grown alongside affected the quality of the teak plantations. This was managed by restricting the food and cash crops allowed alongside the teak plantations. A detailed discussion on the ponam cultivation will be done in chapter 3 (Section 3.5).

Thus, though working plans for teak could specify the general skills as per the requirement of sustained yield of teak, the specific skills in a site of application was influenced by ways of dealing with the problems of organizing nursery and planting as well as the constraints of climate, creepers and non-teak species, along with dealing with labour of the Kanis.

#### ***2.4.3. Fire as Biotic Interference on the Forest Produce***<sup>12</sup>:

Fire protection was considered a very important component of ‘improvement’ in forest management associated with ‘scientific forestry’. Fire was seen as ‘rampant, random and reprehensible’ and therefore requiring mastery. This understanding of fire did not take into account its impact on regeneration and weed control. Proofs of such impacts collected from various ‘experiments’ in different forest areas of India questioned the objective of fire protection. The first two decades of the twentieth century saw the pages of the ‘Indian Forester’, a journal of the forest officials filled with a debate on fire, grazing and forest regeneration (Sivaramakrishnan 1999). The concomitant restriction on grazing which was supposed to cause fire, had been questioned on the basis of the ecological link it had on regeneration. The link between grazing and the optimum amount of babul tree growth in the tank-beds, which would not affect tanks as sources of irrigation to be discussed in the next chapter (Section 3.2), is an example.

In the specific case of Tinnevely, we find fire protection entering the agenda of the Forest Department with fire being assigned as causing more damage than fellings. The failure of expenditure on fire protection to yield expected results shifted the focus to general protection. General protection was a way of controlling fire as and when it occurred. Such a shift in

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<sup>12</sup> WP, p.84-87

focus however, restricted grazing to the areas that needed regeneration. The possibility of fire crossing zamin and Travancore forests to the Government forests was to be jointly managed.

Fire protection as a problem of administration was taken up with Brandis, during his visit in 1882, considering the ghat forests to have had suffered more from annual fires than from excessive fellings. In his expenditure estimation for the establishment of Forest Department, he had allocated Rs.10,000 /---close to one thirds of the annual total expenditure of the department estimated—for fire protection.

Further, the conservation rhetoric on the maintenance of even-flow of streams along with the dry-weather supply in rivers was used as a justification. The restriction on the 'careless', 'ignorant' use of forest for conservation claimed as the 'scientific' use of the forest acquired an additional character of 'mastering' fire. Brandis recommended clearing and burning fire lines which basically was clearing of any fire-carrying agent like grass in an area of 'accepted' width between the boundary of the area to be protected and rest of the forests. These fire-lines had to be supplemented by opening out a practicable path alongside especially in a hilly terrain and, burning tracts stacked with grass early in the 'fire season'. All paths again, were to be fire-traced. Brandis recommended regulation of fire through regulation of grazing, and, shifting cultivation of the adivasis (Kanikkars). Further, the area allotted for grazing was leased out to 'responsible' people who would lose the contract if fire broke out.

It was suggested that Nanguneri and Ambasamudram Ranges including the Kuttalam reserve be divided into six beats each under a forest guard. Fire watchers were to be employed in the fire season each being responsible for a certain length of fire line or path leading through the forest. The annual cost of fire protection for the first five years was expected to be Rs.10,000 /-.

In 1884 the first regular fire protection of a block of 40 square miles was attempted between the Serviar and the Kariar. The following was the expenditure in the various ranges up to 1895 - 96:

Table 2.4.5: Expenditure on Fire Protection in Various Ranges in the Tinnevely Division

<i>Name of Range</i>	<i>Date operation started</i>	<i>Area Specially Protected (Acres)</i>	<i>Expenditure (Rs.)</i>	<i>Average Per Annum (Rs.)</i>
Srivilliputtur	1888-89	11000	3485	498
Kuttalam	1888-89	37000	8000	1143
Ambasamudram	1884-85	25000	14718	1338
Nanguneri	1884-85	21000	7496	681

Source: WP, p.85

In 1896, Hooper, the District Forest Officer, expressed doubt about the success of the fire protection objectives, given the 'irregular and unsatisfactory returns' of protected area in each season compared to the cost incurred. He made a distinction between areas felled in the preceding five years and under regeneration as requiring fire protection as against the rest of the ghat forests, not systematically worked, which could be under the scheme of 'putting-out-fire-when-they-occur'. He therefore limited expenditure per annum on fire protection to around 50% of the earlier expenditure:

Table 2.4.6: Changes in the <sup>Annual</sup> Expenditure on Fire Protection in the Different Ranges in the Division:

<i>Range</i>	<i>Amount (Rs.)</i>
Srivilliputtur	300
Kuttalam	500
Ambasamudram	500
Nanguneri	600

Source: WP, p.85

The inspection note of 1898 hailed the District Forest Officer's decision to discontinue the clearing of the length of fire lines carried out in the previous years, and also for relying on the rule (considered to exist in Tinnevely) of not permitting grazing for some years after a portion of the reserve had been 'wilfully' burnt. The organized system that prevailed in Tinnevely of beating out fires the moment they broke out was also considered as partly responsible for the replacement.

In 1898 the total expenditure on fire protection was limited further to Rs.1,000 a year. In 1901, however, it was felt that the increased working prescribed by the working plans then sanctioned, justified a greater expenditure on fire protection of the various working circles.

The average annual expenditure on fire protection for the period 1901-02 to 1912-13 was Rs.2,293.

In 1913-14 as a result of Peake's--the District Forest Officer's—representations, an ambitious programme for fire protecting the whole of the fuel series and the hill grazing compartments by a system of external and internal fire lines was sanctioned. All the common zamin and State forest boundaries not passing through shola forest were also fire-traced annually. The average annual expenditure on maintaining the fire lines and in paying fire patrols for the period 1913-14 to 1921-22 both years inclusive, amounted to the large sum of Rs.4,781. The area under general protection was 206,712 acres where the percentage of area burnt varied from 0.2 to 14.3; while that under special protection was 35,688 acres where the percentage of area burnt varied from 1.1 to 6.2.

The need for greater economy in expenditure was realized in 1922. Many of the expensive interior fire lines were definitely abandoned and the old system of employing fire patrols during the fire season and fire-tracing only frontier boundaries where necessary, resuscitated. Although the administration reports for the period 1922-23 to 1932-33 made a distinction between areas specially protected and areas generally protected, in actual practice only general protection alluded to above had been undertaken over the whole of the ghat forests. The result of general protection over an area of 242,937 acres was: the percentage of area burnt in acres to area protected varied between 0.4 to 6.8. The percentage of area successfully protected compared very favourably with that obtained under the more expensive system in the previous period.

It was decided from the above results that the expenditure on special protection of regeneration areas such as fuel coupes cannot be afforded because of the lesser financial returns from these areas. Further, the rugged terrain would not fit for internal fire lines without a path alongside them. The sources of the fires were identified as those which had crossed over from adjacent zamin and Travancore forests. Agreement for cost-sharing to maintain adequately wide fire lines along the common boundaries between zamin and Travancore forests on the one hand, and, government forests on the other hand were made with Chokkappatti and Tirumalainaickenpudukudi zamindars and Travancore State.

Thus, fire became permitted at least in some areas under 'scientific management' of British Forestry. The local skills involved in fire-fighting was important in the <sup>restricting</sup> biotic interference of fire.

Grazing and fire had their role to play in the regeneration of mixed forests. The importance of grazing and fire in the new context of regeneration of homogeneous stands of forest produce was reported as results from different experiments especially in dealing with weeds and pests. But this was taken into account only to the extent of reduction in the cost of fire protection. Grazing continued to be allocated to a specific block of forests alone. Restrictions on the access of land for cultivation, especially of the adivasis practicing shifting cultivation, were again imposed.

## **2.5. Conclusion:**

This chapter discussed how exclusive property rights of the forest department over forest land and produce was acquired and legitimised during the colonial period. The change in the mode of resource utilisation to which the forest resources was subjected led to the delineation of forest land from zamin forests which were under the revenue administration. The change in the property rights of produce started with selective produce for collection of rent to exclusive control over administration in which homogeneous stands of marketable species were regenerated. The shift in the regeneration involved attempts at conversion of mixed forests to forests with just marketable species in it to that of regeneration of marketable species in blocks allocated for the purpose in rotation. The shift in the method of working was from the license and voucher system for all removals in the mixed forests to that of homogeneous stands of marketable species extracted either by the department or a contractor under departmental supervision. The shift in the legitimisation of property rights had been from the rhetoric of the failure of earlier rulers in administering forests to that of protection against fire of the produce maintaining the catchment area of the river system irrigating the revenue district. The change in the administration of forests and the change in the legitimisation of property rights over the forest land and produce occurred along with changes in the knowledge about the forests. The change in the standardisation of the produce also was found to shift from head and cart loads to cubic feet of wood to homogenous stands of marketable species with similar physical specification. When attempts at sustained supply was assured by the changes in demarcation, regeneration and working of the produce, working plan as a management tool defining the routines aiding

sustained yield of the marketable species in the quickest time was developed. The extraction and regeneration of evergreen and teak forests as per the working plan depended on learning-by-doing expertise. The different attempts at extraction of the evergreen forests in terms of completely clearing it and substituting it with marketable species were dropped because of the problems of regeneration of the species and their importance in maintaining the catchment area of rivers as envisaged in the conservation rhetoric. The attempt at converting them into railway sleepers and scantlings in delineated blocks was the final strategy that emerged. The revenue from the sale being more than the cost involved in evergreen forest working led departmental working to be substituted by that of contractors. In the case of teak, artificial regeneration was constrained by the problem of maintaining the supply of seedlings from the nursery. The resorting to stump planting by taking into consideration monsoon led to <sup>the situation of</sup> just-resolve-issues-of-labour relating to operations of regenerating teak. The employment of Kanis for teak regeneration will be discussed in the next chapter (Section 3.4). Keeping fire completely out of the produce became costlier and ineffective; thus fire fighting methods were tried for generally protected areas (where regeneration of the produce was not within five years) and later substituted for all areas. This chapter tried to discuss the changes in the administration of forests leading to exclusive control over forest land and produce by the forest department. The changes in administration were not as per rules laid down by science from above and outside with which scientific forestry had been usually associated with in the literature. Science could delineate the general skills required for the operations. But the specific skills in a site of application required knowledge of the relationship of the constituents of the site as evident from the examples of evergreen, teak extraction and regeneration as well as dealing with fire. The transfer of the general skills to form the specific skills for the operation in a site of application thus underwent change depending on the changes in the knowledge of the relationship of the constituents of the site of application. The change in the transfer of general skills to specific skills (the changes in the situated knowledge of the forest department) also depended on attempts at reallocation of existing rights of forest-use and the dependence on existing skills of forest-use which will be taken in the next chapter.



## Chapter 3

### Attempts at Reallocation of Existing Use-Rights of Forests and the Selective Dependence on the Existing Skills of Forest-Use

#### 3.1. Introduction:

This chapter would deal with the attempts at reallocation of existing use-rights of the forests in retaining the exclusive rights over forest land and produce of the forest department. This would be followed by the discussion on the administration of forests requiring selective dependence of the forest department on the existing skills of forest-use of the adivasis.

The exclusivity of the property rights over forest land and produce of the forest department, in spite of its legitimisation in terms of serving public interest through conservation, could not be retained as was evident from the recorded statistics of forest offences<sup>1</sup> in the decade between 1923-24 and 1932-33. We find that around 70% of the total recorded offenses were due to felling and around 25% due to grazing (Table 3.1.1). The problem was basically the incomplete reallocation of existing use-rights.

Table 3.1.1: Forest Offences During the Decennium 1923-24 to 1932-33:

<i>Year</i>	<i>Grazing</i>	<i>Felling</i>	<i>Hunting And Fishing</i>	<i>Assault On Subordinates</i>	<i>Miscellaneous</i>	<i>Total</i>
1923-24	209	499	3	1	13	725
1924-25	210	510	8	0	15	743
1925-26	185	540	12	0	7	744
1926-27	127	475	7	1	12	622
1927-28	186	511	4	0	12	713
1928-29	187	521	10	1	6	725
1929-30	176	441	0	1	8	626
1930-31	163	396	5	1	17	582
1931-32	183	498	10	1	11	703
1932-33	123	376	9	0	18	526

Source: WP, p.22      26.07%      71.05%

The problem of incompleteness in reallocation of use-rights is taken up in detail in section 3.2 in a particular case in which the ryots demand for fuel and grazing was allocated vis-a-vis the railway demand for fuel. An innovative way of stressing the use-rights in grazing is taken up

<sup>1</sup> The average annual revenue derived from compounding fines in the division during the 1923-24 to 1932-33 was Rs.4,849 /-

in section 3.3. This would place the case of reallocation of adivasis who were completely dependent on forests for their sustenance in a comparative perspective.

The change in the mode of resource utilisation that the forests-resources were subjected to ~~required~~ both reallocation of use-rights and dependence on existing skills. The reallocation of use-rights of adivasis is closely linked with the selective dependence on adivasi skill. Thus attempting to understand the change in the way adivasi skills were put to use by the forest department in the change in the administration of forests would aid understanding the reallocation of adivasi use-rights. The section 3.4 tries to conceptualise adivasi skill in a context of change in environment and tools and then attempts to understand its relationship with the use-rights of the adivasis. In section 3.5, we would discuss the change in the way adivasi skill was put to use with the change in the administering of forests by the forest department. The chapter is concluded in section 3.6.

The data used for the purpose apart from the Working Plan of the forests in the division for the decade 1934-35 to 1943-44 (WP) mentioned in the last chapter, are the various ethnographic accounts about the adivasis. These include those in Census of India 1901(hereafter Census 1901); in Census of India 1911 (hereafter Census 1911); in *Castes and Tribes of Southern India*, Edgar Thurston (1909); in Census of India 1931 - Volume I - Part III - Ethnographical - B. Ethnographical notes by various authors edited by J.H.Hutton (hereafter Census 1931); in *Land of Charity : A Descriptive Account of Travancore*, Samuel Mateer (1890) ; in *Travancore Manual*, Vol. II, V. Nagam Aiya (1906); Ethnographic Notes on Scheduled Tribes in the Madras State, Vol. IX V (b) of the Census of Madras State (1961) (hereafter Census 1961); Ethnographic Study on Kanis in Kalakkad Mundanthurai Tiger Reserve (1998) done as part of the World-Bank assisted Forest Research Educational and Extension Programme (hereafter FREEP 1998).

### **3.2. Reallocation of Fuel and Grazing Demands of the Ryots vis-a-vis the Railways in the Village Tank-beds<sup>2</sup>:**

The ryots were dependent on the village tank-beds for their fuel and grazing needs. Grazing practice of the ryots became controversial when forest department took exclusive control over

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<sup>2</sup> WP, p.52-54

administration of tank-beds for sustained supply of demand for the railways. Contrary to the forest department's claim to restrict grazing in the regenerating areas, the revenue department felt that ryots' grazing practices had a relationship with the optimum amount of trees, which would not affect tanks as sources of irrigation. The difference in perspective between the forest department and revenue department over regeneration in the tank beds affecting reallocation of ryots' fuel and grazing needs is considered in this section.

The forest department, with the objective of supply of fuel to the South Indian Railway, which was supposed to be extended to Tinnevely, decided to regenerate and extract fuel from the plains. This decision can be attributed two reasons. The first reason was new areas for fuel supply were sought with the existing forests catering to different demand. The second was the reduction in transport cost in supplying fuel from the plains to the railways. The development and reservation of tree growth in the plains was thus taken up in 1871. The project was started with 5 blocks of wastelands near Palamcottah. Lack of knowledge of the silviculture and technique of planting of the indigenous species led to its abandonment.

The failure led the forest department to foster and extend the natural growth of *Acacia arabica*, *Prosopis spicigera* and *Acacia planifrons* in the tank-beds in the plains. These areas were under the management of the revenue department where the use-rights of the villagers to fell timber for agriculture implements and to graze their cattle were recognised. While the revenue department was stressing the importance of free timber for agriculture implements and grazing of cattle as important for maintaining the land revenue, the forest department felt the restriction on grazing and felling as important for the steady supply of produce and thereby revenue.

Since the area requiring supervision was 18,500 acres (in 1876), the forest department tried to divide tank beds into 5 circles of administration. This was placed under a sub-assistant conservator Mr. Lowry. The cost involved for such a supervision process led to the replacement of the sub-assistant conservator by a Forest Ranger. The forest department could not succeed in gaining exclusive control over administration especially with regards to protection of produce from grazing. The expenditure over tank-beds exceeding the revenue from it for the decade 1871 -81 was read by the forest department in terms of lacuna in supervision of 'indiscriminate grazing' of cattle--even of goats.

	Revenue	Expenditure
1871 - 1881	Rs. 15,534	Rs. 21,511

The Conservator proposed in 1878 transfer of the administration of tank-beds to Revenue department or Public Works Department. In 1881-82, the transfer to Revenue department as per G.O.No.112 dated 27th January 1882 took place. The reserves were worked for extraction and regeneration by the Tahsildar assisted by the old forest subordinate staff and the village officials.

A kind of compromise between revenue and forest department was then arrived by the G.O.No.719, Revenue, 25th July 1887. As per such an order, the revenue department would manage tank-beds, which were with trees few in numbers. The rest of the tank-beds would be under the forest department. Following such delineation in administration, the annual exploitation of the tree growth on the tank-beds was greater than the annual possibility of supply as determined by the principle of sustained yield. Evident from the revenue due to babul in tank-beds, such an extraction was contrary to the claim of 'scientifically' managing tank-beds.

Table 3.2.1.Revenue from Tank Beds for the Decade 1885-86 to 1995-96

<i>Year</i>	<i>From Trees (Rs.)</i>	<i>From Pods (Rs.)</i>
1885-86	5,374	3,236
1886-87	4,372	4,211
1887-88	5,945	4,577
1888-89	12,607	2,714
1889-90	5,556	4,375
1890-91	18,631	4,012
1891-92	18,092	2,354
1892-93	17,551	2,375
1893-94	19,841	99
1894-95	14,382	4,336
1895-96	2,402	6,094
Total	1,24,853	38,363

Source: WP, p.53

Thus a total revenue of Rs.1,63,216 /- had been collected during a period of 11 years-- Rs.15,000 /- a year approximately. In areas in which the revenue department was managing the tank-beds, Brasier, the then District Forest Officer, proposed certain regulations in 1887: these include those about method of extraction (depending on size of the tank-bed and age of

the trees--majority of them to be above 6 years old), about the regeneration mechanism (with 25 of the soundest trees retained as seed bearers); about grazing regulation (complete closure to areas felled). However, the revenue department did not prepare any definite administrative scheme on the above lines. Exclusion of cattle was abandoned when the Tahsildars complained to the Collector that the forest officials were interfering with the immemorial rights and privileges of the ryots.

In 1896, management of the tank-beds were reconsidered as per the forest department especially because the areas were overfelled in the past. To enable Forest Officer to prohibit grazing when necessary the possibility of constituting them all as 'reserved' was considered. All of the tank-beds were near a square mile in extent and were scattered. Thus, consideration of supervision and expense conditions made the possibility inadvisable. Hooper, then Conservator of Forests, suggested the idea of grouping tank-beds into working circles and preparation of simple plans for their future management. In Board's proceedings, Forest No.375, dated 15th August 1896, the Board of Revenue stated that it was unable to support the proposal for reservation by the forest department. The Board of Revenue opined that the practice of grazing in tank-beds in the midst of cultivated land had a link with the maintenance of babul growth at an optimum level, so that tanks as sources of irrigation were not disturbed. Accepting the gradual degradation of tree growth with increase in time, the Board felt that the seeds of the regenerating species was exceptionally favourable in unusually hardy conditions and therefore the percentage of failure would be less. If the above possibility of regeneration failed to meet the demand, the suggestion of supplying fuel for railways strictly limited within the surplus produce after meeting villagers' demand was offered so that ample stock to meet the villagers' future demand was retained. But, such a suggestion was considered by the forest department as no longer the way in which fuel needs of railways and factories were met<sup>3</sup>.

This section thus dealt with the way in which the ryots fuel and grazing demands were met in the tank-beds in the plains. This had to take into account the demand for fuel of railways too. While the forest department felt that the probability of regeneration would be affected because of grazing, the revenue department felt that the optimum growth of trees in the tank-beds, which will not affect tanks as sources of irrigation, was possible because of grazing.

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<sup>3</sup>In 1934-35 the management of tank-beds was with the Revenue authorities. The annual revenue was a little over Rs. 1,000 /-. The District Forest Officer was consulted on rare occasions on professional matter.

Protection from grazing of tank-beds which had less number of trees and under the revenue department was again sought because extraction from the tank-beds which were under the forest department did not adhere to the principle of maximum rate of sustained annual yield. The revenue department refused to accept the protection because of the possibility of catering to the demand for railways just with the surplus produce from the tank-beds. The difference in the perspective of the forest department and the revenue department about reservation can be summarized in a different way. The revenue department prioritized use-rights of the ryots and thus the local knowledge about the role of grazing on the optimal growth of trees so that tanks, as sources of irrigation, were not affected. The forest department, on the other hand, prioritized the demand for railway-fuel depending on the local knowledge for the species that can be regenerated from the tank-beds; grazing was thus not to interfere with the probability of regeneration.

### **3.3. Assertion of Use-Rights of Grazing of Ryots in the Kudiraimozhi Teri Reserve<sup>4</sup>:**

Cattle (200 to 400 according to various estimates) which were roaming over the Teri Reserve and posing problems for the forest department of assigning their ownership were classified as semi wild. The forest department had planted the Teri up with palmyra and other useful species. The afforestation was for preventing the shifting sand in the area from ultimately overwhelming acres of wet cultivation which lie to the east of the reserve. The cost involved in the afforestation attempt made the officials to tackle the problem of these cattle from affecting the probability of regeneration. Protection from these cattle was also important in the context of the nice, succulent, young, one or two year old palmyra plants being potential source of grazing. Further, the surface soil of the reserve, trampled and converted by the cattle to loose sand, easily blew about, affecting regeneration.

In G.O.Ms.No.685, Revenue, dated 18th February 1918, the forest department ordered that semi wild cattle found in the Teri would be presumed to be ownerless and either caught or destroyed. Shikaries were paid Re.1 for every animal-shot and were also given the option of purchasing the animal destroyed for Rs.3; cattle which could be caught were to be impounded and not shot. About a dozen animals were destroyed according to the records. The concession had to be withdrawn because of lack of volunteers since the shikaries were

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<sup>4</sup> WP, p. 84

intimidated by the local population, who professed to own the cattle. In 1928, again, the department offered a similar auction for capturing or destroying the semi-wild cattle. The lessee was to receive three-fourths of the sale proceeds of all the captured animals and was to provide his own equipment, ropes, etc., for the operations. The idea was to drive the cattle into ambushed nets and thereby entangle and capture them. But the attempts were unsuccessful, as the nets could not be staked to the ground sufficiently strongly to hold the captured animals.

The earlier attempts failed in making the ryot to either remove the cattle or assist the department in their removal. The calves were taken to the village; the owner incidentally milked the cows, which come to feed them. Young bulls were also frequently captured, tamed and sold, with or without the knowledge and support of the local subordinates. The forest department thus considered that the owners of the semi-wild cattle treated the reserve as private grazing ground to their own profit affecting the regeneration operations. Capturing operations departmentally in the adjacent Vallanad reserve had proved a failure financially. The attempt at 1911, 1921 was again to be repeated for the decade 1934-35 to 1943-44. Since the whole of the Teri was closed to grazing it was considered that no grievance could arise, if the cattle in it were destroyed. Three months notice in the District Gazette reinforced by wide publication in all the surrounding villages, to the effect that all cattle not claimed and removed would be treated as ownerless and destroyed was considered to meet the case. Special beats for the purpose were to be organised by the District Forest Officer and the Range Officer and the cattle destroyed, after due notice.

The reallocation of grazing that the forest department took into consideration was based on the expectations that the individual owner would claim the rights over cattle. Such an expectation in governance did not work as many ryots could find informal means of remaining anonymous and claiming the rights over cattle. The cost effectiveness that the administration of the forest department had to ensure made it difficult to completely capture or destroy these cattle. The 'unclaimed' cattle episode is a good instance of how the exclusive right over land and produce of the forest department was made ambiguous because of the limitation of knowledge about informal means of claiming rights over use of the ryots. The following sections would take up the case of reallocation of rights of forest-use of the adivasis.

### 3.4. The Changes in the Skill of Adivasis with the Changes in Environment and Tools of Resource-use and its Relationship with the Use-Rights:

The adivasis' invoking of use-rights by continuing to depend on forests may communicate images of being 'stuck' with their heritage similar to non-human animals. The assumption in such imagery is the notion of heritage as a body of knowledge existing even prior to the context in which it is applied for an objective. A focus on the debate (Ingold, 1996) of how adivasis procure resource from the forests for their sustenance can help us to put in perspective such an assumption. The debate is about how the skill for procurement of resources from forests passes on to successive generations of adivasis. The problems are whether changes in environment and tools are taken into account in such a 'transfer' of skill, and, the character their culture acquires.

The distinction between social learning and individual learning (eg. Richerson and Boyd 1992) can put the problem in perspective. Social learning enables a novice to understand the rules constituting and principles governing resource procurement from members of community who are already knowledgeable. Individual learning is the application of social learning in the course of the activities in the environment.

One of the strategies that has been conceptualised is of the ideal possibility of effective and efficient resource procurement taking into account the variability of location, time and chance in the environment<sup>5</sup>. Such an ideal possibility is considered to be achieved by internalising a flow-chart of decisions which will work with the information 'obtained' from the environment. This flow-chart, for decisions to be arrived within a framework, is conceptualised as 'cognitive algorithm' internalised with an 'innate device' in the individual. Such an understanding derived from planning theory, assumes two things. The first one is making action in a context pre-determined in the 'cognitive algorithm' merges the social learning and individual learning of the individual. The 'cognitive algorithm' is considered to be the result of strategies that some elders have found in a particular environment as efficient. The second is

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<sup>5</sup> This ideal possibility is the obverse of the imagery of 'economic man' who employs Reason to transform the environment for defined objectives. Thus the ideal possibility discussed inverts the relationship of 'Reason deciding what can be done with Nature' into 'Nature deciding what Reason can do'. Nature deciding what Reason can do also forms the basis of the following assumptions of neo-Darwinian evolutionary theory: (a). Morphological attributes and behavioural propensities of individual organisms must be specifiable in some sense *independently and in advance* of their entry into relations with their environment. (b). the *components* of these specifications—whether genes or (in human) their cultural analogues—must be transmissible across generations



the assumption about culture, which mediates the formation of the 'innate device'. Culture is assumed to be independent of changes in environment and changes in tools of procuring resources. Culture here seems to be an analogue to 'genes', which are biological information-codes, in the non-human animals, which is considered to transfer traits of a species to the succeeding generation. The analytical focus in this process, which is termed 'enculturation', had been in terms of how the 'actual' resources procurement strategies deviates from the ideal way because of strategies of elders internalised by the mediation of culture.

The beginning towards another way of understanding the procuring of resources can be in terms of considering a mutually constitutive and ongoing relationship between people and environment. The conceptual alternative to cognitive algorithm in this scheme is 'rules of thumb'. The rules-of-thumb is inherently vague, specifying little or nothing about the concrete details of action. In a world of persons, objects and relations, rules-of-thumb aid expressing what was done and what to do. Language of the Kanikkars plays a very important role in this expression. Language of Kanis expressed as 'a mixture of Tamil and Malayalam' in different ethnographic notes talks more about the languages the ethnographers know, rather than what it is for the adivasis. Changes in Kanis' relation with the constituents of forest get reflected in the changes in their language<sup>6</sup>.

But even such a language can aid just in communicating 'what to do' or 'what can be done' leaving the skill involved in 'how it was done' (in the very first instance and later, for example) as a puzzle<sup>7</sup>. Action is associated with abilities of a different kind: how body/mind co-ordinates movement in an environment, as one learns to procure resources: 'to orient you in such a way that you can obtain the best possible position from which to use the skills learned by the body on which, in the final analysis, your success depends'. The narration of the skill of a honey-taker would put this in focus:

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<sup>6</sup> 'Words in the Kani Language are indicators of the differences in the way living-beings manifest in particular contexts in their relationship with other living-beings. For instance, a living-being, say 'x', was not named so-and-so by a fictional first Kani. It was rather the case that the living-being *x-in-action*, in relationship with other living-beings, appearing in particular contexts was termed 'x'; this word was retained in social experience by the term 'x' not made separable from the specific way in which that living-being was experienced'. (FREEP '98)

<sup>7</sup> The following example is a description of a skill. Executing the skill, however requires abilities of a different kind: 'On seeing a python, they (the Kanikkars) would fix it on the ground, with its belly upwards with a pair of wooden forks which they would press against the neck and against the tail. Thus holding the python, they would cut open the skin of the belly and remove the fat embedded in that portion. They would put one or two sutures in the lacerated portion and leave the python alive. The fat taken out of the python is said to have medicinal value and is used for healing bone fractures, sprains, etc'. (Census 1961)

"..one of the tribe descended the rope ladder several hundred feet long, and securely fastened to a tree at the top of the precipice. Having arrived at his goal two hundred feet from the top, and over 300 feet from the ground below, he ignited the torch, and after the usual smoking process, which took some little time to perform, the bees made a hurried exit from the nests, and the Kanikkar began the work of destruction, and with every movement the man and the ladder swayed to and fro, as if the whole thing would collapse at any movement. However, all was safe, and, after securing as much honey as he could conveniently carry, he began the return journey. Hand and foot he went up ring after ring until he reached the top in safety, performing the ascent with an air of non-chalant ease." (Thurston 1909)

Since the learning of co-ordination of body/mind with the environment is an ongoing process, the conceptualisation of skill acquisition in terms of an 'innate device' is questioned. Learning of technical skills seems to depend on what might be called 'technology acquisition support systems' (Wynn 1994). They are not innate but rather 'systems of apprenticeship' constituted by the relationships between more and less experienced practitioners in 'hands-on' contexts of activity. The continuous possibilities of occurrence of such relationships determine the continuity of a technical tradition. The context of learning is not similar to a situation of apprenticeship in an engineering firm, for example, where the work-organisation is based on the 'efficient' execution of expected operations. Inside the forests, the context of learning can be best summarized as situations of uncertainty in each moment. If the changes in the forests could be imagined in terms of the movements of different constituents, there is, first of all, a quantitative shift in the constituents. There will be also a qualitative change in terms of changes in the relations between the constituents of the forests—a preying, for e.g., not only changes the constituents of the forests thereafter, but also changes the probability of preying. Thurston (1909) gives a hint to the emerging uncertainty in the constituents of the forests by defining the special characteristics of certain places in the forests<sup>8</sup>. This can be conceptualised in terms of a different way in which they understand each part of the forests.

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<sup>8</sup> 'They (Kanikkars) have, it has been said, 'certain spots, trees or rocks, where their relations or friends have met with unusual good luck or calamity, where they generally offer their prayers. Here they periodically assemble, and pray that the catastrophe that had befallen a comrade may not fall on them, or that the blessings which another had received may be showered on them'

‘..each ecosystem is considered to be under the providence of Devathies<sup>9</sup>. Each Devathie’s providence is also resort to Peys, the indicators of unexpected qualitative change in the constituents of the forests. Each Devathie’s providence is ‘ripe’ on certain days. Further, the sounds of birds indicate the good or bad omen to proceed further. The degree of attention required for such keen observation decides action’ (FREEP 1998).

In such a context, learning occurs

1. without explicit code of procedure, specifying the exact movements to be executed under any given circumstances; this is because practical skills of this kind seem fundamentally resistant to codification in terms of any formal system or rules and representation (Ingold 1995) given the understanding that any situation to be dealt with being always new.
2. Without the separation of the learner’s involvement with other persons and that of the involvement with the non-human environment

Awareness about the properties of surroundings and the possibilities they afford for action can be understood by 2 components: Observation and Imitation. Observation does not imply coping information into one’s head; nor is Imitation executing the received instructions as characteristic of the passive learner. ‘Observation hints actively attending to the movement of others; Imitation, the alignment to the movement of one’s own practical orientation towards the environment. Both aid a kind of rhythmic adjustment in the relation between the learner and the surroundings which would constitute skilled practice’. (Ingold,1996).

The orientation towards such a relation with the forests can be understood from the Kanis having certain norms, which is expected to be followed in the forests. Otherwise, in their perception, ‘forests defy’<sup>10</sup>.

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<sup>9</sup> ‘The Chaavus, Devathies, Peys and Gods are ‘energy-fields determining the liveliness of the forests for the Kanikkars. The Kanis signify, the specificity of adivasis’ experience in being part of the immense liveliness of the forests, in terms of these energy-fields, in a language appealing only to them.’(FREEP 1998)

<sup>10</sup> ‘Before entering a Devathie’s providence with any demand for sustenance, a prayer for protection, hinting to education of attention of the place is offered. The place is considered to be constantly changing each moment; each individual is thus required to have complete attention aiding action. Thus noise-making, feeling of superiority expressed through irony, anger usually expressed with ‘bad words’—words questioning the sexual morality of the other person has to be dropped. If the code of behaviour is not adhered to, the individuals will lose sense of direction and will be threatened by the Peys, finally losing the access...’ (‘Kadu Penna-ingum’ in their language) (FREEP ‘98)

One can find in the cooking tradition associated with Kani women such 'Observation' and 'Imitation' in their relationship with forests aiding the differentiation of the poisonous Mushrooms from the edible ones, for example<sup>11</sup>. Another example can be the way two of the forest produce is made edible<sup>12</sup>. The rhythmic adjustment of the body in actively attending to the movement of others and orienting oneself in the environment is again possible because of the martial art 'Adimarai' the men practice. For women, Kol-attam (performance using 'kols' which are cylindrical wooden pieces) and Kummi-adi (performance using rhythmic clapping of the hands) aid such a co-ordination while in the forests.

The change in the tools of resource procurement also changes the co-ordination in the forests. 'Kanis were using digging sticks in the past but now they use implements like Vettukathi, Aakathi, sickle axes, crowbar and spade just like plainsmen.' (Census 1961)

The change in the way of producing fire by using matchbox is again not uniform<sup>13</sup>.

Thus, the coordination between the individual and others, and, that between individuals and environment, is inculcated in each successive generation, through a process of learning in the course of the novice's practical involvement with the constituents of their environment under the guidance of more experienced mentors in the conduct of their everyday tasks.

The way perception and action get tuned to each other in the above learning-by-doing of the learner is termed enskillment rather than enculturation (Ingold 1991,1993; Palsson 1994). Here instructions received—to watch out for this, attend to that and so on—are education of attention which become relevant in the context of learner's engagement with the environment.

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<sup>11</sup> 'Mushroom ('Kummullu' in their language) usually grows when thunder falls during rainy season. There are more than 10 edible varieties.....There are also mushrooms which are poisonous and it requires the deftness of experiencing in the forests in order to identify them'. (FREEP '98)

<sup>12</sup> '...Salapanna Ka is also called Salanga. This has to be boiled 10 times before it can be made edible. The boiling is to remove the poisonous content; this will produce bubbles-like-colloid each time, which even if the hen consumes will be no more. The other method adopted instead of boiling is to cut it into pieces, dried and made to be in running water for 7 days. Afterwards, it is dried on rocks. This is then pound to flour ready for a tasty pudding. Parandakka (Chellika) grows in creepers. Found in bunches, this 'seed' cannot be eaten by people who are paralytically attacked...This 'seed' is first burned; the outer cover removed and the inner nut is made edible. This requires boiling 5 to 7 times. Before boiling the nut is cut open by a knife. Eaten this way, it tastes like coconut. It is a medicine especially for breast-feeding mothers.' (FREEP '98)

<sup>13</sup> 'In the past they used Chakkimukki for making fire. It is said that every male member used to carry one with him. Fire is produced by striking a small steel blade against a flint. The spark is caught in a piece of cotton and fire is produced by gently blowing the ignited cotton. All the articles required for making fire are packed in a small bamboo cylinder measuring about 2" in diameter and 2" in height. This cylinder has a leather cap. The use of this in some settlements for making fire even today ('60s) was something of a surprise to us, when most of the tribes have given up making fire by their traditional method'.(Census1961)

Thus the skill to engage with the environment for an individual is a process of learning to observe the environment, which implies choice between frameworks in which the individual had been sensitised to the environment. This is not any systematic body of cultural representations inside the head, which would imply choice within a single framework of understanding a constantly changing environment. This readiness to learn, to observe, to act and not be passive respondent to some cognitive algorithm of decisions already made 'innate' can be understood from the usual description of a Kani Man:

'The men bear suspended from one of their shoulders a cloth bag containing two or more partitions, in which they keep their vilangupetti or box containing betel, tobacco and chunam. They carry, too, suspended from one of their shoulders, a cane basket wherein they place their day's crop of grain or roots, or any other food obtained by them. They attach to their waist-string or cloth a billhook and knife, and carry their bows and arrows slung on their shoulders' (Aiyar 1904, cited in Aiyar 1906)

While discussing the situated knowledge of adivasis, we tried to bring in rights, responsibilities and privileges agreed upon by the community as important for allocation in the organising of an activity in the forests. Given responsibilities and privileges, the rights of an adivasi would depend on the change in the skill in procuring resources from the forest. Changes in the way adivasi skill is used would therefore indicate the changes in the way use-rights were allocated.

### **3.5. The Changes in the Use of the Skill of the Adivasis by the Forest Department in the Colonial Period:**

The change in the mode of resource utilisation that the forest-resources underwent had two components. One is the constituent of expertise for the new objective in hand. The second is the rights over the output of the new mode of resource utilisation. The first component necessitated selective dependence on the existing skill. The second component led to reallocation of existing use-rights. This section will attempt to understand how selective dependence on adivasi skill and reallocation of existing use-right of adivasis happened with the change in the mode of resource utilisation of forest resources. The exclusive property rights over forest land of the forest department had to tackle the use-rights of adivasis in using forest land for their cultivation. The existing knowledge about forests, the low cost in employing the adivasis and a sustained supply of labour compared to plains labour led to selective dependence on the skill of the adivasis for regeneration of homogenous stands of

marketable species. A system of forestry, which could handle both selective dependence on skill and reallocation of existing use-rights was developed with the aid of adivasis.

The use-rights of Kanikkars over forest lands was associated with the 102.5 Kanis (which was a land measure) being offered to these adivasis by Marthandavarma, the King of Travancore, in return to their help in his struggle for the throne<sup>14</sup>. The shifting cultivation they practiced was a practical approach to certain inherent difficulties in preparing a proper seed-bed in steep slopes where any disturbance of the surface by hoeing or ploughing will result in washing away of the fertile top soil. The adivasis, therefore, take care not to plough or disturb the soil before sowing. The destruction of weeds and improvement of tilth necessary for a proper seed-bed are achieved with the help of fire (Census 1961). The forest-uses of adivasis included: growing of varieties of cereals hill paddy such as 'Kanathava, Pinappukkadu, Chennallu, Vellavalam and Muthucheri' and Millet, Ragi, Thenai and pulses. They also grew the roots and tubers like Tapioca, Valli or sweet potatoes. Several varieties of plantains including the bamboo plantain, ganja and tobacco for their own consumption were also grown. They gathered from neighbouring forests such natural products as 'Neduvan Nooran, Nooli, and Kavala' roots. Honey gathering from clefts of rocks or from branches was done in the months of Medam and Edavom, which were brought for sale in Thenkombu or bamboo joints adapted for holding it. They collected three varieties of honey, Chiruthen, Perunthen and Thoduthen (Aiyar 1904, cited in Aiyar 1906)

The delegitimisation of the use-rights of Kanikkars over forest lands began by associating their shifting cultivation with primitiveness because it did not fit into the productivity criteria of settled agriculture that the ethnographer of Kanikkars in Census 1901 was aware of. The Kanis, as per the ethnographer, first clear a patch of forest and then set fire to it. Sowing then occurred with hardly any previous tillage. After two or three years, when the field

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<sup>14</sup> The following narration gives the way the Kanis were given rights in the forests before the colonial period : 'Another story, also narrated by the Kanis, to show how they acquired the name of Kani or Kanikkar was that when Marthandavarma, the Yuvaraja of Travancore was fighting for his throne against the sons of the Ettuveettu Pillaimars, his uncle (the then King) came across a tribal settlement of Velans. In the course of his wanderings, they were helpful to him and gave protection in times of adversity. When he finally ascended the throne, after vanquishing his enemies, he gave 102.5 'Kanis' of land to the Velans in Nedumangad, Neyyattinkara, Vilavancode and Kalkulam taluks to be used by them as they pleased. Hence the Velans came to be known as 'Kanis'. .....This story has some historical basis because the capital of the Maharaja of Trivancore was then located at Padmanabhapuram which was close to the Kani settlements and in the course of the long warfare which the Yuvaraja had against his opponents, it is likely that he got some substantial assistance from the Kanis who were noted for their skill in archery'. (Census 1961)

diminished in productiveness, the Kanis went to another forest-patch and followed the same rough and ready methods of cultivation. In other cases, as soon as the first patch of ground over-grew with shrubs, it was once more cleared and cultivated. Thus one patch of forest ground after another was employed for agriculture purposes till the whole forest<sup>15</sup> was cleared. (Census 1901).

As the Kanis say, 'Malaikkutiittukuta ennum, maram murichehu kuta ennum, kapana vannirikkunnatinale patti kutiyantu tanne parkkanam ennu nichchayichchirukku' which translated into English means 'as the Sovereign has commanded that no jungle should be burnt nor any trees felled, we have had to resolve on giving up the migratory cultivation'. (Census 1901).

This delegitimisation of migratory cultivation can be looked in terms of restricting the transfer of general skills of using forests (conceptualised as 'rules of thumb' in section 3.4) into specific skills in a particular context of activity (conceptualised as 'enskillment' in section 3.4). The different kinds of ways in which the transfer of general skill to specific skills was allowed can help us to understand the beginning of dependence of existing skills of forest-use for administration. The first was the case when the Kanikkars could not claim the land in the forests they cultivated once the forests had been sold for conversion into plantations of coffee, spices, tea etc. This led the Kanikkars, as per Honniss (cited in Census 1901), to stress the use-rights in forest land by migrating to new hills and valleys. They finally had settled in the dense jungles of the lowlands of Travancore. They usually do not become coolies in plantations but aid in felling for accessibility in forests better than the plains labour. The strategy in terms of withdrawal from planters' use of the forest lands may seem viable for Kanikkars. But this option again had limits: 'their caste rule imperatively prohibits them from travelling more than a hundred miles out of their forests' (Census 1901). The second was the case of the forest department beginning to use the skills of the Kanikkars for facilitating the departmental operations during the transition of administration from property rights over selective produce in the forests to exclusive property rights over output of homogeneous stands of marketable species from the forests. Aiyar (1904) had observed that the Kanikkars collected minor forest produce, such as wild cardamoms, dammer or Kunthrikam, wax and wild ginger, besides honey and supplied to the Sirkar or its contractors for a small Kudivaram

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<sup>15</sup> The regeneration possible in the areas cleared by them for cultivation earlier when they move to a fresh area is missed by this imagery of whole forest becoming cleared.

or remuneration. Thurston (1909) also reported of Kanikars engaged as coolies on planters' estates, or in felling timber and cutting bamboos for contractors. The animals entrapped by Kanikkars were brought as live-animals for the zoological gardens in Trivandrum. Aiyar (1904) further observed that they were good at bamboo, rattan and reed wicker-work or basket work of different kinds.

When forest resource-use became more and more specialised in terms of the produce demanded, the consequent regeneration of such special uses of forest, and, expansion of their regenerating areas led to shifting cultivation of the Kanikkars being restricted. Brandis, the first Inspector General of Forests, during his visit to the Tinnevely region, assessed that Fire, rather than excessive felling in the forests had been the primary reason for the 'degenerated' state of the forests there. This further led to the questioning of the rights of shifting cultivation, which was considered as a source of fire. The perspective of a District Forest Officer could give the account from the administrator's perspective. As per this District Forest Officer, the shifting cultivation of the Kanikkars was considered as responsible for the 'destruction' of the fine shola forest which had covered the Ullar, Peyar, Upper Kariar and Serviar Valleys. In the early part of the century the Forest Department had tried 'controlling' the 'ravages' of the shifting cultivation of the Kanikkars by allotting them sites in the right bank of Peyar. Most of the Kanikkars, as per the DFO, moved across the Tambraparani River to the Singampatti Zamin Forests, or, across the frontiers to the Travancore Forests where the restrictions were not as severe. Eight members of the Kanikkars alone were remaining in the right bank of Peyyar. (WP, p.45)<sup>16</sup>. This restriction on the shifting cultivation of the adivasis in particular areas in the Government Forests was justified in terms of the civilizing mission of the British in separating the 'wild tribes' from the 'wild forests' by making them do settled cultivation in an area. The second migration of the adivasis in asserting their use-rights over forest land to Singampatti Zamin forests and Travancore forests can be noted.

The Forest Department, with specialised operations of inventory and controlled regeneration of the forest-resource, depended on the Kanikkars who were in the Government Forests, and did not migrate, in new ways. They were employed for intermittent occupation in the

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<sup>16</sup> The perspective of the DFO gave the areas traversed by the Kanikkars without any mention about the natural regeneration of the areas left behind by them. The silence about such natural regeneration may be because of the change in the meaning natural regeneration had acquired as per the 'scientific forestry'. Scientific forestry is supposed to ensure 'total regeneration of marketable species in a stipulated time from a given area'.



Kannikatty forests; they were also employed for regenerating gaps in the evergreen timber coupes and for clearing the common boundary line between Kattalaimalai estate and the Government forests (WP, p.45). The Kanikkars were also very important for the collection of information about common evergreen species for the preparation of working plan in addition to guiding the working plans<sup>17</sup> party through the forests. They were not only excellent guides but also showed 'remarkable powers of endurance' though of poor physique. (Ibid.)

The Kanikkars continued to stick to their practice of shifting cultivation in spite of the forest department's attempts to make them discontinue the practice. This was again possible by two mechanisms. One was the withdrawal to areas where the laws were not as stringent as in the Government forests, which was mentioned earlier. The second was the resistance in participating in the operations that the forest department expected them to do in their administration of forests for the new demands. An example of such a resistance is the inspection note of Lushington.

'That the Kani has been a regular curse to the district, there is not a shadow of doubt. He is the one hillman who is still allowed to practice shifting cultivation.....He is now actively engaged in destroying the fine shola forest of Singampatti Zamin and Kattalaimalai estate. The effect of his destruction on the flow of water in the Tambaraparni must be immense. Wherever he has gone, he has spread lantana, which has been a further source of annoyance. He is a shiftless creature who does not like to do any work. He will not uproot lantana because the grass cuts him, cannot attend the Survey party in Travancore because of leeches, and always has an excuse against doing anything at all except destroying a further area of forest. We have got rid of him from the Government forest with the exception of ten families located in Kariar and I trust that we shall get rid of him permanently' (Inspection note of Lushington quoted in WP, p.46)

Given their 'sticking' to the practice of shifting cultivation, a more workable form of dependence than driving the Kanikkars permanently away, was the integration of tending teak plantation with their cultivation. The logic of the system was simple. After the marketable timber had been extracted, the remaining trees were burnt to enrich the nutrient of the topsoil so that along with the food and cash crops, the Kanikkars would plant teak seedlings in prescribed rows. As the soil gets lesser and lesser suitable for the food and cash crops, the

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<sup>17</sup> The data collected in the preparation of working plan was important in deciding the administrative policy of the reserve forests in terms of the operations that had to be carried on for the regeneration and extraction of species catering to the timber, fuel, minor forest produce and grazing demands from the forests as discussed in section 2.4 in the previous chapter. The regeneration of species in the ever-green forests that would yield marketable timber required selective dependence on adivasi knowledge.

teak saplings, after weeding and with replacement of failures, would be ready to be monitored with less effort of the forest department. Called the 'ponamdari forestry system', the integration was also considered to be a method of 'civilizing' the adivasis, of preventing the 'ravaging of forests' because of shifting cultivation by allotting them areas where marketable timber had been extracted. The ponam teak plantation of 1912 in the Kariar valley was considered to be a fine example of such a civilizing mission of the adivasis (WP, p.46)

This administrative practice of ponam cultivation, had, coupled with it, the advantages of using the skill of the Kanis in other ways too. The skill of the adivasis in planting and works involving the bill hook, in addition to knowledge of the evergreen species was better than plains labour for employment in the regeneration and tending operations in the forests. The cost involved for using the adivasi labour was much less than for the plains labour. Rates of unskilled labour quoted in the Working Plan as collected in the recent past in the Ambasamudram Range given below can indicate the low wages for the Kanis.(cf. items 3 & 4).

Table 3.5.1 Rates of unskilled labourers including Kanis in Ambasamudram Range:

	<i>Man</i>			<i>Woman</i>			<i>Boy</i>			<i>Reserve Watchers Per mensem</i>			<i>Fire patrol per mensem</i>		
	Rs.	A.	P	Rs.	A.	P	Rs.	A.	P	Rs.	A.	P	Rs.	A.	P
1.Outer Slopes	0	8	0	0	5	0	0	4	0	10	0	0	10	0	0
2.Mundanthorai plateau	0	9	0	0	6	0	0	5	0	-	-	-	-	-	-
3.Minor ghats	0	12	0	0	7	6	0	8	0	12	0	0	-	-	-
4.Kanis	0	8	0	-	-	-	0	6	0	10	0	0	-	-	-

Source: WP, p.46

The plains labour were again not able to bear the physical conditions and loneliness in the forests for more than a week.(WP, p.46). Thus, the Kanis could offer a sustained skilled labour at low cost for the regeneration and tending of marketable species in the forests. Further, the transition of Kanikkars to being subordinates (Reserve Watchers) of forest department had strategic importance in terms of using adivasi skills cost-effectively for monitoring of the forests. Subsequent to such additional advantages in successfully enlisting Kani labour under ponamdari system for the teak plantations between 1912 and 1915, the extent of teak plantations had increased. From 1917 onwards, teak plantations were started in the Serviar valley near Kodamadi. In 1934-35, there were some 260 acres of teak plantations in Kariar and Serviar valleys. (WP, p.76)

In the working plan for 1934-35 to 1943-44, an administrative account specifying the details of operations in the ponam cultivation was created when the evaluation of regeneration of teak plantations of the Clear Felling Working Circle in Ambasamudrum Range was considered. The dependence on Kanis started with the consideration of restricting the shifting cultivation of the Kanis as recommended by Royal Commission on Agriculture by allotting them 40-acres of land. This 40-acre block assigned to them was to be divided into 4 ten-acre blocks, and each such block to be given to them for cultivation for a period of 2 years. In the second year of cultivation of a particular block, they would be supplied departmentally with seedlings or stumps of suitable evergreen species which the adivasis would plant in their allotment, at an espacement which will not create hardship by reducing the adivasis' cultivable area. After successful completion of afforestation of the 40-acre block assigned to them in 8 years, an additional 10 acres will be allotted in the same locality taking into consideration the adivasis' choice of the area. The evergreen species that the Kanis had to plant was *Hopea parviflora*, which had been identified in older Kani clearings. The Kanis further, would not be allowed to practice shifting cultivation anywhere else without the sanction of the Chief Conservator of Forests. (WP, p.99). . In addition to being employed in departmental operations, as already discussed, the ponam cultivation as specified, will aid an evergreen species found in the Kani clearings to be closely tended. This would aid regeneration of the catchment area of Tambaraparani, requiring minimal intervention of the Forest Department thereafter, though absolute rights over the species was secured. The selective dependence on adivasi knowledge and reallocation of their use-rights aiding the forest department to control the final output from the area thus became an administrative strategy.

The Kanis, on the other hand, in addition to being quarantined between plantations because of the allotted area to be afforested, had to face restrictions on their crops they usually grow as per the conditionalities of the forest department for ponam cultivation. The raising of gingelly and vegetable creeper crops of any kind was not permitted as the former was considered extremely exhausting to the soil and the latter made effective weeding impracticable. The casualties in terms of failure of regeneration of the saplings had to be again replaced by the Kanis with teak or rosewood stump plants in addition to performing weeding operations to a radius of 1 foot around them. (WP, p.119). Plantain cultivation of the adivasis was allowed

only in areas where teak was not proposed to be regenerated, for example, in swamps and rocky areas (WP, p.135)

The Kanis had been described as willing, but erratic workers. This 'willingness' was again considered to be the result of adversity. The strength to employ them came from three considerations:

1. The Hukdar of Kattalaimalai estate managed by a Roman Catholic Mission considered the adivasis as good labourers (WP, p.45)
2. To reduce considerably the average costs of departmental teak plantations of Rs.40 per acre during 1934-35 in Tinnevely division, ponam cultivation of Kanis was considered in the Clear Felling Working Circle (WP, p.45)
3. The Kanis claimed their desertions in ponam cultivation in the past had been due to the harsh treatment they received from the lower subordinates. A close personal touch with them by the district forest official would remove all real causes of grievance promptly (WP, p.135). Further, reallocation of departmental working and ponamdar working from earlier methods would aid such a process. The original planting with stumps would be done departmentally while lining and staking was to be done by the ponamdars under departmental supervision. Apart from keeping time with the monsoon, this arrangement would also sort out the blaming on ponamdar for earlier defective planting (WP, p.135)

With the expectations of cost-effectiveness mediated by appropriate 'grievance-management' and assured by the experience of Kattalaimalai estate in using the adivasis as labourers, clear delineation of the dependence of Kanikkars was arrived at.

The ponamdar forestry system was not a simple give-and-take relationship with the forest department. It was a method of administering forest for a different mode of resource utilisation where the rights of forest use of the adivasis was reallocated in such a way that it will aid the operations and property rights over administration of the forest department. We find the adivasis remaining in the Government Forests who took up to ponamdar forestry system became labourers who produce 'allowed' food and cash crops leaving behind their semi-autonomous agriculture subsistence, as more and more forest land was converted into teak- and evergreen-plantations. This system, in addition to cost-effectiveness and maintaining 'unskilled' labour-supply of the Kanis also aided a built-in higher regeneration

probability of teak saplings than those done departmentally (which had a failure of 66% as discussed in section 2.11 in the last chapter). This system again happened in the earlier stages of the establishment of the forest department with very less fund allocated for its operations. This system also aided the recruitment of Kanis to the lower rung of the forest department as forest-reserve watchers. When the economics of teak export started moving against the expectations of the Forest Department and increasing awareness about the ecological consequences of teak monoculture in terms of higher probability of spread of attack by insects was identified (Bryant 1994), the adivasis became quarantined between teak plantations practising their agriculture with the new restrictions.

We saw in the previous section that given responsibilities and privileges, rights would change with the change in skills in resource procurement. In the colonial context, use-rights over forests of the adivasis, in a context when exclusive control over forest land and produce was claimed by the forest department, was stressed in forms which could be broadly put in the form of a continuum. On the one end of continuum was the withdrawal of adivasis to localities where the rules were comparatively less stricter. On the other end was the ponamdari system where the use-rights of adivasi over forest lands was temporarily allocated as liability for the rise of evergreen and teak plantations in the same land. The adivasis were also employed in forest operations as manual labourers and their knowledge about evergreen species, for example, was selectively used for deciding upon the regeneration mechanism of marketable species. In such a context, not only change in responsibilities and privileges differentially affect rights, but also rights themselves will depend on the liability fixed for the skills which were inputs in the change in mode of resource utilisation. The inputs for the change in the mode of resource utilisation were one, certain general skills of the adivasis about the species and accessibility in forests aiding the formation of the general skills of the forest department constituting expertise in administration. Two, certain specific skills of the adivasis in forest-use constituting the specific skills of regeneration and extraction of forest resources of the forest department. The selection of the general and specific skills of adivasis as inputs to the new resource utilisation led to the monitoring of the transfer of all other general skills which would enable the formation of specific skills of the adivasis which had earlier constituted their right over produce in forest-use. This would lead to reversal of their plans and expectations of forest-use, change their perception about constraints and opportunities and reduce the benefits attached to viable choices. This could be observable in the shift from mixed forests to homogeneous stands of marketable species affecting biological

diversity that earlier defined forest-use of adivasis. The different kinds of resistance of adivasis to the exclusive property rights over forest land and produce of the forest department thus become important in retaining the transfer of general skills to specific skills of the adivasis in the new context, i.e., in the change in the situated knowledge of the adivasis. However, the possibility of innovation of forest-use by the transfer of general skills to specific skills available as use-rights over forests for a generation of adivasis will not be available for the next generation when such use-rights become restricted.

### **3.6. Conclusion:**

The initial objective of the chapter was to put in perspective how selective dependence on existing skills and attempts at reallocation of existing use-rights constitutes change in the mode of resource utilisation. Specific cases of the ryots and, of adivasi Kanikkars were taken up. The reallocation for the demand of fuel and grazing of the ryots vis-à-vis demand for fuel for railways led to the difference in perspective between the forest department and revenue department in terms of management of the tank-beds. While the forest department prioritised the demand for railway by the exclusion of cattle for grazing, the revenue department felt grazing was the use-rights of the ryots and cannot be excluded. The tank-beds with less number of trees were left to the management of the revenue department while the other tank-beds were under the management of the forest department. The exploitation of fuel beyond the annual sustained yield of the forest resource led the forest department to rethink the exclusive control over administration of all tank-beds. But the revenue department refused to oblige to exclusive control on the following reasons: (i.) grazing had a link with the optimum tree growth that will not disturb tank as an irrigation source, (ii.) the railway demand can be met with the surplus of existing ryots' demand and (iii.) the stock of fuel species would be retained as the species sustained the hardy conditions of regeneration. The importance of ryots in the land administration during the colonial period, their direct payment of land revenue and the role they played in economic expansion when state personnel imported industrial technologies, both material and organisational (see Ludden, 1985) could probably be associated with the importance given to the use-rights of the ryots by the revenue department. This priority would be in contrast to the consideration of the use-rights of the adivasis who did not pay any revenue to the forest department. The ryots informal association of leaving the cattle 'unclaimed' in the Teri Reserve led to the problem of reallocation of use-rights of

grazing of the ryots as the expertise of the forest department was constituted only in terms of allocation as per claimed ownership.

The process through which the adivasi skills were acquired and transferred was through the co-ordination with the environment acquired while co-ordinating with more-skilled people. As per such a process, culture of the adivasis cannot transfer the general skill into specific skills independent of the changes in the context of activity in the forests. To link skills with the role of rights, responsibilities and privileges in the social organisation of an activity of forest-use among the adivasis, use-rights of adivasis in the forests can be considered to change with skills given responsibilities and privileges in the social organisation of an activity.

The way adivasi skill was selectively used in the constitution of the expertise of the new mode of forest resource utilisation is related to the way reallocation of use-rights of adivasis occurred. The use-right of adivasis for forest land was reallocated in such a way that it would aid the regeneration of teak and evergreen plantations in the same land. Called the ponamdari forestry system, such a reallocation was basically the liability to the inputs the adivasis provided for the regeneration. This had limits because of the land being claimed by the forest department once regeneration of the plantations start. Thus, we observe two changes. One of the changes is in responsibilities and privileges brought about by the restrictions on the use-rights over the forest produce differentially affecting rights. The second change is in the allocation through rights depending on the extent to which liability was fixed for the skills used as inputs in various forest operations. The legitimisation of such a reallocation in terms of serving the public interest of conservation of water catchment areas did not take into account the externalities that the adivasis would face in losing the use-rights over forest land and produce. Some adivasis also withdrew to Singampatti Zamin forests and Travancore State forests where they could practice their cultivation with comparatively lesser restrictions. The different kinds of resistance of the adivasis against the exclusive property rights of the forest department over forest land and produce could decide the transfer of their general skills to the specific skills for innovation of forest-use in the new context. Changes in the way adivasi skills could be put to use in the post-colonial period would aid understanding such changes in forest-use. This would be discussed in the next chapter.

## Chapter 4

### Changes in the Use of Adivasi Kanikkars' Skills of Forest-Use in the Post-Colonial Period

#### 4.1. Introduction

The study started with exploring how the forest department's exclusive property rights over forest land and produce was arrived at. The forest department was formed in a context of tackling uncertainty in the output during the process of the change in mode of forest resource utilization. Such a requirement needed an expertise for which selective dependence on existing skills of using forests was felt necessary. A parallel requirement was reallocation of existing use-rights over forest land and produce. This reallocation was attempted for acquiring exclusive control over administration of forest resources and thereby, the output. Such a reallocation was incomplete to the extent that assertion of use-rights—from the ryots, for example—continued through different means. Reallocation was also done in such a way that the skills involved in existing use-rights over forests—the adivasis', for example—were made inputs to the new mode of resource utilisation. The exclusive claim over output that the forest department established led to existing use-rights being allocated as liabilities to inputs to the new mode of resource utilization. Incomplete reallocation and allocation of liabilities to skills constituting hitherto use-rights over forests, were legitimized as for primarily serving public interest. The notion of public that the forest department invoked did not take into account the local population, which had use-rights over forest produce. Assertion of use-rights, again, took varied forms.

In the post-colonial context, we find the Kanikkars being employed in the ponam forestry system of softwood varieties, which had demand as inputs to match industries in the region. The restricted allocation of use-rights allowed as liabilities for inputs to the ponam forestry system became debatable when the forests were to be converted to no-human-interference zones for the preservation of wild life.

This chapter contains two sections. The first section tries to discuss the changes in the post-colonial period in the Indian context. It will discuss the changes in the administration of forests in terms of changes in composition as per demand from forest industries. This would be followed by the changes in the administering of forests with changes in the demand for



preservation of various species and the various intervention affecting the administration of forests in terms of expertise and reallocation of existing use-rights. The next section would discuss the changes in the way Kanikkars' skills are used in the post-colonial context. This discussion would be during the shift from the demand for forests catering to forest industries to that of the problems of reallocation of use-rights of Kanikkars when the forests they were in was converted into a Tiger Reserve.

## **4.2. Changes in the Administration of Forests in the Indian context in the Post-Colonial Period:**

Changes in the administration of forests in the Indian context in the post-colonial period both in terms of production forestry and preservation of wildlife will aid contextualising the changes in Kalakad Mundanthurai Tiger Reserve.

### ***4.2.1. Changes in the Composition and Demand for Forests:***

The important difference in the mode of utilisation of forest resources in the post-colonial period had been the shift from the demand from railway and military purposes to the demand from forest industries. An example of this was the paper industry which had increased production from 92,800 tonnes in 1948 to over 1 million tonnes in 1978 (Guha 1983). This led to replacement of slow growing species by large plantations of quick growing, economically attractive species such as eucalyptus, tropical pine and teak. This shift had been termed as a shift to 'production forestry'. The next difference was in the expansion of trade in Minor Forest Produce (MFP). Forest revenue from MFP had grown from Rs.3.03 crores in 1947 to Rs.130 crores in 1977 (Guha op.cit.). Private contractors predominate in both the MFP trade and the logging of timber. Attempts by Government to do away with intermediaries because of the problem of monitoring minimum wages for the forest-dependent communities used in the collection of forest produce for the contractors, and, the optimum extraction from forests by the contractors, resulted in Forest Labour Co-operatives but with mixed results. (Sivaramakrishnan 1987).

In both colonial and post-colonial period, we find the use-rights of the adivasis over the forest produce being restricted leading to a number of grass root movements (Sivaramakrishnan op.cit.)

#### *4.2.2. Changes in the Administration of Preservation:*

The difference between conservation and preservation can aid in understanding the shift in administration that occurred from forests as sites for plantations of homogeneous stands to sites for endangered wild life. Conservation appeared in a context of change in the mode of resource utilization of forest resources during the colonial period. It attempted basically to bring in questions of soil erosion, water management, sustained yield forestry etc. in environmental management. Preservation, on the other hand, is usually around issues occurring in conversion of forest resources for wildness areas, parks and sanctuaries. The changes in the administering of preservation in the post-colonial period are summarized from Rangarajan (1996).

The demand for hunting requiring preservation of certain species during the colonial period followed in India of the early '50s, in the continuation of the attitudes and lifestyles of the colonial order. The demand was from officials, princes and landed classes who considered it both as a privilege and leisure. The legal continuities of this trend can be seen in wildlife parks being either princely hunting grounds or reserved forests. Exclusive rights over forest land and produce of the forest departments in forests taken over mainly for revenue and strategic reasons from the late nineteenth century onwards affected the use-rights of hunting and other kinds of forest-use by adivasis and other forest-dependent peoples. Preservation of wildlife earlier meant management of regeneration of game birds and animals, by delinking totally or through interventionist measures their natural enemies.

A shift in perspective in preservation occurred with the focus on disappearance of such natural enemies. Such a shift in terms of administering led to the 42<sup>nd</sup> amendment to the Indian Constitution in 1976 when forests and wildlife were shifted to the concurrent list instead of the state list. The conversion of forests as wildlife sanctuaries acquired shape at the national level with Project Tiger, which was launched in 1973. The idea was to allocate 5% of land under the exclusive control of Forest Department and free of all human activities for the preservation of Tiger. This was further the world's largest single wildlife preservation programme. The changes had been in terms of ending all tiger hunting, creation of core-zones in the tiger reserves where commercial forestry was halted and the expansion of the protected area system in 1980-84. The number of national parks increased from 19 to 52 in the two decades between 1975 and 1995. The use-rights of the local population again received little

attention in the administering of forests. Thus, preservation was dependent on exclusive rights over forest land and administration centered on (a) extension of conservation areas (b) intensified protection wherever possible (core areas and any other national park). We find that (i.) uniform model of preservation being applied to land with diverse ecologies (ii.) Biological conservation was based on the premise of the exclusion of resident peoples.

The results of the attempts by Project Tiger can be summarized at the present in terms of wildlife sanctuaries and national parks in India covering 4.3% of the land area; about 1% of it forming the core region where no-human-interference was absolutely followed as per the forest department. There had been problems in the exclusive control over administration of the forest department. The primary one had been the permission for use of the forest land and produce for different industrial and commercial purposes vis-à-vis the use by local residents living either within or in the perimeter of the parks. We also find that since 1991, ~~the~~ sanctuaries had been denotified for location of extractive industries, tourism resorts, manufacturing plants and other development projects<sup>1</sup>. The number of people living in and around parks had been estimated to be 4.5 million by a recent study. Displacing all of them or denying complete access seemed neither administratively nor politically feasible. We also find those ecologically sound developmental attempts—the eco-development project, for example—around the sanctuaries in return for further restrictions on resource-use within the tracts. The attempts at management of these parks by the forest department with the involvement of the local population had made little progress. The legitimisation of forest department for its absolute control over administration as against the rights of forest-use by the local population had been in terms of taking care of the rights of future generations and of non-human inhabitants. Questions around who is to preserve what and for whom led to different shades of intervention which cannot be neatly split into exclusive control over administration advocated by wilderness preservationists, and, local participation in the administration which constitute ideas of popular conservation. Rangarajan (op. cit.) discussed 4 different interventions based on position on State Control, Commercialisation, Livelihood issues and maintenance of Biological Diversity. In the case of adivasis the primary issue would be the use-right over forest produce with biological diversity. The biological diversity that the adivasis expect can be affected by absolute control over administration by the forest

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<sup>1</sup> Such uses of forests are parallel to the conversion of evergreen forests into plantations of coffee, spices etc. during the colonial period till Brandis recommended an administrative strategy for the forest department in 1882 that no land was to be alienated for coffee cultivation.

department or conversion into marketable species by firms. Further, both the forest department and firms can use adivasi skills as inputs for their management of supply.

#### *4.2.3. Different Interventions in Preservation:*

The intervention of the 'pragmatic conservationists' had been in problems of wildlife in both preserved and non-preserved areas. They break up the problem of the conflict between people and animals in terms of its micro-context and suggest alternatives. Though the people belonging to this category consider preservation of species important, they do not attempt to preserve each and every individual of the species. They believe that efficient management of resources is a problem of information at the disaggregated level; absolute control over administration by the forest department is then not a problem.

The constructive workers attempt creative solutions in sorting the problem of improving bargaining position of losers in terms of reallocation of use-rights and augmenting their resource-base. Their intervention had moved beyond employment generation towards regeneration and securing entitlement rights for direct resource-users. They try to thus secure a share of forest products for villages as liability for protection of forests on a participatory basis. Such an idea of Joint Forest Management however had progressed little given that 75 million hectares of land are under forest departments and only a small fraction of land is under Joint Forest Management. They also attempt at provisioning of basic services via participatory efforts in arriving at alternatives for people near parks who are dependent on forests for their livelihood. Such an effort can be equated with the eco-development project. They are able to bargain for incremental change by highlighting success at grass roots level. They consider livelihood issues as central but their efforts are few and far between. The importance of biological diversity in the agenda may vary widely depending on the priorities of the group in question. They attempt with conscious local level efforts indigenous tree-species-planting, grove trees protection in a wetland, a patch of grassland or a scrub jungle regeneration. These micro-changes are however constrained by the exclusive control over forest administration by the forest departments and the law aiding it.

The urban intelligentsia do not face the negative externalities of degradation of ecosystem as much as rural activists or constructive workers. They start with the premise that deforestation and decimation of wildlife is because of denial of use-rights of the local people and the

catering of non-local demand for marketable species. The exclusive control over administration by the forest department does not take into account the diversity of resource-use systems even over small stretches of the Indian countryside. Biological diversity could be maintained through innovation and participation by empowerment of social groups in asserting their use-rights. The issue in maintaining biological diversity, according to these proponents, is not in preserving nature in its pristine form but identifying human activities, which would enhance rather than reduce biological diversity. In trying to see forests, scrub lands or marshes as existing inside human history, the issue becomes 'certain groups versus others' rather than 'nature versus people'. They have intervened in public debates on dams and on forest policies preparing the ground for more sustained critiques not only of forestry itself, but resource access in general, which were weighted in terms of resource-extensive use. Their attempts at empowerment of groups to assert their use-rights had been integral to many movements of political assertion.

The rural activists are directly engaged in efforts to secure a direct participatory role in terms of use-rights over administration and produce for resource-users of open access or common property lands, government forests, ponds, pastures and wildlife sanctuaries. The premise they start with is the failure of coercive power to relocate or displace people in and around protected areas. Assertion in use-rights, on the other hand, may not change the composition of resource-base under the exclusive control of the forest departments facilitating the non-local demand from the forests. Since the adivasis are more aware of forests than rural or urban elite because of sustaining in forests historically, these proponents advocate that the adivasis will decide upon the core area in a reserve with participation and control in administration. They feel that such a participation and control at the local level had just begun though lots of unresolved issues remain. Further given the centralisation influencing administration and control over produce by the forest department, the autonomy of the local in resolving issues would remain a problem.

#### **4.3. Changes in the Way Adivasi Skill was Used in the Post-Colonial Period:**

The changes in the way adivasis skill has been used with the changes in the way forest has been administered in the post-colonial period will be the focus of this section.

In the post-colonial period, till Mundanthurai was declared a Tiger Sanctuary, the Kanikkars were engaged in the ponam cultivation referred to in the colonial period. The plantations they were engaged in were of the softwood type (the eucalyptus). In addition to allowing restrictively their food and cash crops, they were allowed to have their cattle too. After the area had been declared a Tiger Sanctuary, the possibilities of engaging in ponam cultivation were no more there. Quarantined between plantations, they were either with no lands or with lands in the core region of the sanctuary, which were considered as 'illegal occupancy'.

The changes can be observed with the change in the population in the Kani habitations in the Reserve in the 1961 census and the 1998 FREEP Study.

Table 4.3.1. The Population of Kanikkars in the Tirunelveli District(as per Census 1961) :

<i>Name of Settlement</i>	<i>Total Population</i>
Mayilaru	75
Inchikuli	60
Agasthiar Nagar	80
Tharuvattamparai	30
Kiltharuvattamparai	45
Total	290

*Source: Census (1961)*

Table 4.3.2. The Population of Kanikkars, in the settlements as per (FREEP '98)

Peria Mylar	39
Injikuli	34
Agasthiar Nagar	130
Tharuvattamparai (Servalar)	74
China Mylar (Adukkuparai /Kiltharuvattamparai	125
Total	402

*Source: (FREEP '98)*

The 5 Kanikkars' habitations in the post-colonial period include Peria Mylar, Injikuli, Agasthiar Nagar, Tharuvattamparai (Servalar), China Mylar (Kiltharuvattamparai). The increase in population in the past 37 years is 112 members.

One important change that is found in this period is the shift of the Kanikkars in the Kowdalai Forests and Singampatti Zamins, (where many of them had migrated because of the strict forest rules in the government forests), to areas near the Upper Papanasam Dam (Census 61, p.92). Apart from the change of Zamin Forests to State Forests after the zamin land

acquisition act in the post-colonial period, this shift actually is to facilitate the ponam cultivation that the adivasis were made to engage in this area (Census 61, p.102). Calling it as 'Thaungia Cultivation', the Census '61 study considered ponam cultivation as mutually beneficial except that after a few years when the plantations grow to a particular height, that land will be no more available for cultivation of the adivasis. Started from 1953, the plantations that the adivasis were engaged in were of the softwood kind, which substituted raw materials earlier imported from Kerala to the match industries in Tirunelveli and Ramnad Districts.

"As a beginning, *Silanthus excelsa* and *Salmalia malabaricum* had been raised in the Kodamadi teak (failed) series and neighbouring natural forests (total 10 acres). In 1954, another 50 acres were planted but both failed. *Bombax malabaricum* was planted in Mundanthurai (Padarmalai series) plateau of Ambasamudram Range in 1957. The planted area was given for Kumri cultivation of tapioca (*Manihot utilissima*), sweet potato (*Ipomea batata*), chillies (*Capsicum* species), ragi (*Elusane corocana*), cotton (*Gossypium* sp) etc. In 1966, 67, 68, 71 and 72 Padarmalai series were almost unsuccessful due to the failure in management under Kumaridar (another name for ponamdar) system. Owing to the failure of this from 1975 onwards, departmental planting of *Acacia moluccana* was carried out in Ambasamudram Range.'

(p. 49 – 50, Dr.P.V.Karunakaran & Sugato Dutt, History of Resource-Use in KMTR, Tamil Nadu, Wildlife Institute of India, Dehra Dun (unpublished document of the world-bank study of stake-holders in the Tiger Reserve for assessment of eco-development project) (hereafter Karunakaran Study)

The Kanis grew tapioca and chillies. They also grew jack and other types of orchard trees. They were also expert in fishing. Apart from these activities for which the Kanikkars had been using their skill in the past too, we find during the immediate post-colonial period, private contractors also engaging them in such tasks as honey gathering though at a low wage (Census 61, p.103) Besides that 143 Kanis were employed in plantations, mostly in the Kattalaimalai estate in this area. Besides this, 46 are shown as employed in other services. They are in the Forest Department and in the Public Works Department as watchers, lascars and peons. This can be attributed to the level of literacy among the Kanis of Tirunelveli district being found to be 15.9 % when compared to the 6.7% of the Kanis of Kanyakumari district. The Tribal Residential School established in Papanasam by the Welfare Department could be cited as responsible for the change. The Kanikkars were also dependent on forest produce in the interior of the forests like tubers, yams, plantains and even jack fruits. Paddy was grown by broadcasting seeds in the rain-fed slopes. Some plants of Coffee, Areca-nut

and tobacco were also grown in the fields they cultivated. Occasionally, hunting of deer or rabbit was also done (Census 61).

Thus we find that the adivasi skills being employed more or less similar to the way in the colonial period with restriction of their practice of shifting cultivation till the late 70s. The changes are the introduction of the Tribal Residential School leading to the participation in a few lowest grade jobs. The dependence of the skill of the adivasis for the operations of the forest department is evident from their participation in ponam cultivation and as watchers in the department.

With the general trend in the Indian context of preservation of wild life being equated with the protection of game birds and animals, and interventionist measures for protecting them from human interference (Rangarajan, op cit.), the areas now forming Kalakkad Mundanthurai Tiger Reserve were made wild life sanctuaries.

“In 1977, it (Mundanthurai plateau) was redesigned as Wildlife Sanctuary under Wildlife (Protection) Act, 1972. It was formed by Singampatti ex-zamin forests and Papanasam Reserve Forests that cover an area of 567 sq.km.

‘The Kalakkad Reserve was notified as a wildlife sanctuary in 1976 via, G.O.Ms.No.183, Forest and Fisheries Department, dated 6.3.1976 under Wildlife (Protection) Act 1972, for protecting the endemic and endangered Lion-tailed Macaque and its habitat. It was formed by Kalakkad, Valliyoor, Therkkuveeravanallur, Manpothai and Kolundumalai Reserved Forests of Naguneritaluk and covers an area of 250.64 sq.km.’ (Karunakkaran Study)

The creation of Wild Life Sanctuary led to the shift of energy of the forest operations from plantations to preservation and tourism promotion<sup>2</sup>. About 300 sq.km. area in KMTR subject to grazing was completely stopped from 1976. (Kanth 1996).

With the discontinuing of ‘ponam cultivation’ the Kanikkars became quarantined between the plantations. The major attempt by the Kanikkars is the formation of the ‘The Kani Kudiirruppu Hill Tribes Labour Co-operative Society T.A.74’. This was started in 1981 for

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<sup>2</sup> An instance of this is how one of the spots in the sanctuary is to be organised as per a policy document: ‘Sengaltheri seems to provide scope for forest recreation. A good road and more accommodations, and, if possible, a canteen may be organized’ Krishnan, M, National Wildlife Action Plan Survey of Tamil Nadu, The Kalakad Sanctuary, Tirunelveli District, 1976



contracting minor forest produce from the forests. The 'strict control over degraded habitats' led to the closure of the society in 1984. (FREEP '98)

The next major change was the formation of the Tiger Reserve in 1989 by joining both the Kalakkad and Mundathurai sanctuaries administered by Tirunelveli South and North Divisions respectively under Mundanthurai division, (which was created in 1977). Two of the Kani Habitations were in the core regions of the Tiger Reserve. One more change in the administering of the forest resources implemented in November 1994 is the pilot eco-development project for conservation of bio-diversity in the reserve 'with active people's participation in 145 hamlets involving an expenditure of Rs.914.70 lakhs'. (Tiger Project Unit: Kalakad Mundanthurai Tiger Reserve: Note on the Achievements and Progress of Work under FREEP, 1998). The idea basically is to provide micro-credit to the people dependent on the forest for alternative income generation measures. The village forest committees were formed in Agasthiarnagar, Servalar and Maylar Kanikudiirrupus. The focus on the adivasis was restriction in their fuel use. No micro credit operations were on in the Kani habitations because of lack of collateral for the credit. Further, in 1998, only 100 hamlets were 'covered' as per the progress report 1998.

The changes in the way adivasis' skill could be put to use is evident from the FREEP 1998 study. 'At present, most of the Kanis (76%) of the Kanis are engaged in own occupation (agriculture) or coolie with fishing. The occupation is purely seasonal in nature—depending on the seasons they involve in agriculture activities, work as forest-labour (hardly one or two months in an year) and honey-collecting. About 11 per cent are working as Watchers in the forest department, 8.73 per cent (women-folk) are housewives and only four per cent engaged in other occupations (watchman, clerk in post-office, boat operators, business and beedimaking)'. (FREEP 1998)

The cultivation of tapioca in their land is converted into chips as it has a higher market value than tapioca. This conversion of chips requires employment of Kanis who are not land-holders. The 'forest-labour' is mainly the clearing of grass in the roads in the buffer zone of the Reserve to increase the tourism value of the Reserve and is therefore available only for a month. The appointment of 'watchers' who are in the lower rung of the forest department started from 1992. There are also forest-guides who aid flora and fauna research. They are among the 4% of the Kanis who are employed in other occupations. The dependence of the

skill of the adivasis for the utilization of resources of forests had taken these new forms of research about the forest. The changes in more than 15% of the occupations required Kanikkars' educational achievement (around 82% literates) which could be possible because of the presence of the Tribal Residential School. This school became a high school in 1998.

Table 4.3.3. Literacy and Educational Level of the Kanis (FREEP 98)

<i>Name of Habitation</i>	<i>Educational Status</i>				
	Non literate	Primary	Middle	High	Total
Injikuli	13 (52%)	11 (44%)	1 (4%)	0	25
Periya Mylar	7 (18.92%)	16 (42.1%)	11 (28.95%)	4 (10.53%)	38
Chinna Mylar	19 (15.97%)	59 (49.58%)	25 (21.01%)	16 (13.45%)	119
Servalar	13 (18.57%)	42 (60%)	13 (18.57%)	2 (2.86%)	70
AgasthiyarNagar	15 (11.72%)	59 (46.09%)	36 (28.13%)	18 (14.06%)	128
Total	67	187	86	40	380

Source: FREEP 98

The attempts at the displacement of the Kanikkars' hamlets in the core region became the major source of conflict with the forest department. The issues around land cultivated thus become important. The Adiravidar Welfare Department with 30 acres of land brought from the Forest Department established Agasthiar Nagar Kanikudiirruppu. Out of the 30 acres, 3 acres were to be allocated to the Tribal Residential School; the remaining 27 acres being distributed at 1.5 acres for 18 families. These families were selected from the different plantations: 6 from the plantations at Mylar and 12 families from the plantations at Tharuvatamparai (present Servalar) in which 6 families were from the plantations at Kariar and 6 families from Katalaimalai Estate. The number of households as per the FREEP 1998 study is 35.

The land they were cultivating in Servalar Kanikudiirruppu which had 19 households in 1998 was given away to the building of houses of Electricity Board with the promise that they would be given land elsewhere. This promise not being kept, they started clearing the forests for cultivation in a place 1.5 miles away from their habitation where a plantation has failed. They were effectively prevented and the 'offence of felling' was taken to the court.

The China Mylar Kanikudiirruppu had 30 households in 1998. It is situated in the buffer zone of the Tiger Reserve with practically no cultivable land.

The Periya Mylar and Injikuli Kanikudiirruppu each constituting 9 households are in the core region of the Tiger Reserve. Since the land in Periya Mylar and Injikuli are considered illegal occupancy, the amount of land was not revealed.

The conflict over other uses of the forest is evident from the way they look at the Forest Department as quoted in the focused group discussion of the FREEP 1998 study.

‘they (the forest department) are just interested in displacement, in making us run away....they restrict us when we take stones, when we take sand, when we take grass, when we take fire wood for our own houses...where shall we go then...? ...to the streets...?’

‘Just going to the forest has been made difficult...Just to keep your foot on the forest has been made into a fear...you cannot get grass for your roof which has to be changed yearly...you can never think of changing a roof...it leaks everywhere....what can we do...? ...where can we go...? Even if you dig for mud for your own house you are not permitted.....what can we do for our sustenance...?’

As the use-rights of adivasis over the forests were curtailed to privileges (during the ponamdar forestry system) and then concessions (their yet-to-be displaced habitations in the core region of the reserve), the problems emerging out of such a context led to the dependence on outside agencies especially the political parties for voicing their rights in the forests. There are three associations through which they voice their rights: one, registered association at Agasthiar Nagar Kanikudiirruppu in strategic relationship with a Dalit Organisation, another association at Servalar formed as part of the Kani Association for the Kanis in Kanyakumari in strategic relationship with an all tamilnadu tribal forum affiliated to the cpm (communist party of India, Marxist) political party, the third, common for China Mylar, Periya Mylar and Injikuli in strategic relationship with an all tamilnadu tribal forum affiliated to the ucpi (united communist party of India) political party. These three associations will further enter into strategic relationship with each other when the problem faced is of a common character. These associations can be considered as made out of strategies of rural activists ‘who directly engage in efforts to secure a direct participatory role for resource-users in the control of open

access or common property lands, government forests, ponds, pastures and wildlife sanctuaries' (Rangarajan op cit.). Three associations representing their voices can be further seen in terms of the requirement of specific struggles and dilemmas in each of their habitation (Li 1996)

Thus in the post-colonial period, we have the pattern of the way adivasis skills could be put to use as in the colonial period, but in new contexts. The continuation in terms of ponamdar forestry system for the soft-wood species, the employment by contractors, by the forest department and the employment in the department as forest watchers are instances. They are also employed as forest guides for various researches on forest-resources. The employment requiring 'basic formal education' was again possible because of the presence of the Tribal Residential School. The adivasis again, were able to 'stick' to honey gathering and, cultivation of tapioca, which are converted into chips as they have a higher market value than tapioca. They attempt representing their rights in the forests through the formation of associations for their habitation representing specific dilemmas and struggles and in strategic relationship with political parties.

#### **4.4. Conclusion:**

In the post-colonial period in the Indian context, we find in the early decades, plantations catering to the demand of forest industries like paper industry is regenerated. Contractual work attempted at the extraction of minor forest produce and felling of timber were replaced by labour co-operatives but with mixed results. The use-rights of the forest-dependent communities affected by the exclusive control over forest land and produce of the forest department led to many grass root movements. The idea of preservation of wild life started with the catering to the demand for hunting of certain species suitable for game leading to their natural enemies being hunted. Preservation of such natural enemies became the next focus. Project Tiger initiated in 1973 to allocate 5% of the land for the preservation of tiger is one such example. Forests and wildlife were further taken into the concurrent list from the state list following the 42<sup>nd</sup> amendment to the Indian Constitution. Here again exclusion of rights over administration to the forest department led to the use-rights over land and produce of the local population being affected. The intervention around this conflict in the two decades 1975 to 1995 led to the classification of four kinds of groups: the pragmatic conservationists, the constructive workers, the urban intelligentsia and the rural activists. The

classification was further based on the position regarding exclusive state control, commercialisation, livelihood issues and maintenance of biological diversity. Such a classification would aid understanding how expertise of administration and reallocation of existing rights are multiple in the context of conflict over exclusive control over forest resources. Such a background in the Indian context would help understand the changes in the post-colonial period in the Kalakkad Mundanthurai Tiger Reserve. The Kanikkars continued to be employed in ponamdar forestry system for the generation of soft-wood varieties which had demand as inputs to match industries. They were also employed by the contractors for the collection of minor forest produce. When plantation operation came to a halt with the area being declared a Wild Life Sanctuary in 1977 they became quarantined between plantations. Their hunting of small games and cattle rearing was restricted as per the new rules of administering forests. The attempts at forming a cooperative society for obtaining contracts of minor forest produce was closed with the forests being no more to be used for extracting minor forest produce. When the area was declared a Tiger Reserve in 1989, two of the habitations were in the 'core region' of the reserve from which displacement were attempted. The Tribal Residential School increasing the spread of educational achievement through the years could aid their forest knowledge to be put to uses in a new context: forest-guides for researches on forest resources, and, watchers, who are the lower rung staff in the forest department. The eco-development project, trying to restrict Kanikkars' dependence of fuel on the forests had not started the micro-credit operations till 1998. The attempts at displacement had led to the formation of associations representing their habitations, which strike a strategic relationship with the political parties to maintain their rights of use of forests. This voicing was through different associations because of the specific struggles and dilemmas of each habitation.

## Chapter 5

### SUMMARY AND CONCLUSIONS

This study is primarily about the changes in the way adivasis' (Kanikkars) skills have been put to use in the context of the changes in the administration of forest-resources in Tinnevely (Tirunelveli) during the colonial and post-colonial period. Changes in administration of forest resources had two constituents. The first is the expertise, constituted by the selective dependence on existing skill in the use of forests. The second, control over output, involved attempts at reallocating existing use-rights over forests. Hence the study was concerned with how reallocation of rights over forest-use of the adivasis occurred in the context of change in the administration of forests.

The way adivasi skill was formed and transferred to the next generation required qualification. The understanding that adivasi skill is acquired through mediation of 'culture', which in its turn is assumed to be independent of the context in which it is applied, has problems. The practice of Kanikkars that considers that 'forests defy' if attention over its ever-changing character is not taken into account, gives importance to the context of activity. In a context of activity, an individual acquires skills in the orientation of the individual body/mind in the forests while co-ordinating with more-skilled people. The transfer of general skills of forest-use from more skilled people to specific skills of forest-use in a context of activity for the individual occurs because of education of attention and learning by doing in the forests. This orientation of the individual body/mind is further aided by the martial art training in the case of men, and performance using 'kols' (cylindrical wooden pieces) for women. The skill of the adivasis is considered situated because they are shaped while dealing with changes in the constituents of the forests in the social organization of an activity. The social organization of activity is as per the rights, responsibilities and privileges agreed upon collectively by the community. Given responsibilities and privileges, rights over forest-use of adivasis will change with change in their skills.

The situated knowledge of the adivasis in the use of forests is contrasted with another: the British administration of forest-resources. The British administration of forests, in the process of utilising forest resources for a non-local demand new and different from the past local demand on the forests faced a different set of allocation and regeneration conditions in the

forests. The question of allocation was taken up when delineating from the revenue department the jurisdiction of a special department (forest department). This department had exclusive property rights over certain forestlands reserved for regeneration and extraction of marketable species catering to the new demand. This total claim was justified in terms of the rhetoric of conservation of the watershed of rivers, irrigating the agricultural lands in the revenue district. The acquisition of the forestland was in negotiating in different ways more than 10 zamins occupying about 50 per cent of the forestlands. Further, the forest department's exclusive claim over these lands led to attempts at reallocation of the demand of ryots for timber, fuel and grazing in specific areas. Such a reallocation of forest-use of the ryots was incomplete as is evident from 25 per cent of the total forest-offences relating to grazing and 70 per cent relating to felling in the decade 1923-24 to 1932-33. The priority of the revenue department for the demand of the ryots rather than demand for timber and fuel for the expanding railway network again affected the reallocation.

The specific conditions of regeneration that the forest department faced were shaped by the change in the administration of forest-resources from a regime of restrictions aiding rent on the forest produce to a regime of inventory and controlled regeneration of species. The change can be specified as a shift from regeneration of mixed forests to regeneration and extraction of homogeneous stands of marketable species in the quickest time. Such a shift was difficult as evident from the case of evergreen and teak plantations given the particularities of the constituents of the site of application of the regeneration scheme. The working plan, which formalises the regeneration and extraction of marketable species through specification of routines of forest operations, depended selectively on local knowledge for the purpose especially for the common evergreen species. Another dimension of the problem is the role grazing and fire played in the regeneration of mixed species in the past not being taken into account in regeneration in a new context. About one-thirds of the total annual departmental expenditure on fire protection at the time of establishment of the department was subsequently reduced by fighting fire as and when it broke out. However, with more areas brought under working plans, even the expenditure on fire fighting started increasing. The change in the situated knowledge of the forest department was thus possible because of the transfer of general skills of administering forest-resources from other contexts of forest-resource utilisation to form the specific skills in addressing uncertainties in a specific site of application.

The dependence on the local knowledge for purposes of regeneration as per the new mode of forest-resource utilization can be elaborated by taking the case of adivasi Kanikkars who were completely dependent on the forests for their sustenance. The forest department tried to address two issues. One was the selective dependence on the Kanikkars' skills for the regeneration of marketable species. The second was the management of adivasis' use of forests. The two issues were addressed together under the ponamdar forestry system. . As per this system, the Kanis were to assist in the regeneration of teak and evergreen saplings along with the cultivation of certain 'permitted' food and cash crops, which were believed not to harm the regeneration of the saplings. The failure of regeneration attempts up to 66 per cent in the case of teak by the department could thus be addressed. The reallocation of rights of forest-use of the adivasis was again in areas where marketable timber had been extracted. The British Officials justified such attempts as part of a civilizing mission of controlling the 'ravages' done to forests by shifting cultivation. The Kanis in the ponamdar forestry system were also used as 'unskilled' labourers in forest operations because of their endurance and skill in the forests coupled with the cost effectiveness compared to the use of plainsmen. However, the adivasis, once they move out to the next plot leaving behind regenerated teak or evergreen species which require minimal departmental intervention thereafter, lost the land they cultivated, as it had been restricted for the rotation of teak or evergreen regeneration. In such a context, Adivasis' claims to use of forests for cultivation could be understood in terms of a continuum. At one end of the continuum, were the Kanikkars who moved to the neighbouring Singampatti Zamin and the Travancore State forests where the forest rules were comparatively less severe. At the other end, was the ponamdar forestry system. In between was the adivasis' resistance in not participating consistently in the operations of the forest department and continuing with their shifting cultivation. Hence the use-rights of the adivasis was affected by changes in responsibilities and privileges agreed upon by the community for the social organisation of activity in the forest brought about by forest administration and resistance to it. Again, it was also affected because of reallocation in terms of the liabilities for skills which form input to the new mode of forest resource utilisation, the output of which was exclusively claimed by the forest department. The selection of specific skills of the adivasi forest-use in cultivation for the constitution of the specific skills of the forest department in a specific site of application is evident from the ponamdar forestry system. This selection of specific skills of adivasis for the administering of forests put in monitoring the transfer of general skills of adivasis to specific skills of forest-use thus affecting their new ways of forest-use. Thus the importance of the role of co-operation along with complicity and



conflict interweaving resistance of adivasis in maintaining their use-rights against the exclusive property rights of the forest department over forestland and over produce.

In the post-colonial period, again we find the ponamdar forestry system continuing with soft-wood varieties which had a demand as input in the match industries close-by. We find the Kanikkars migrating from the erstwhile Sigampatti Zamin forests and Kowdalai forest to the upper basin of the Kariar to be employed for the purpose. Practising their cultivation alongside, we find around 50 per cent of them employed in the plantations in Kattalaimalai estate, while around 16 per cent were employed in the lowest rung of the Forest Department and Public Works Department as watchers, lascars and peons. They were also employed by contractors for collecting minor forest produce.

When the forests, including the Kanikkars settlements, was declared a Sanctuary for the preservation of the Tiger, the focus of the forest department shifted from plantations to preservation and tourism promotion. The Kanikkars were then quarantined between plantations. The formation of the 'Kani Kudiiruppu Hill Tribes Labour Co-operative Society T.A.74 in 1981 for contracting minor forest produce collection had to be closed in 1984 for 'protecting degraded habitats'.

The declaration of the area as Tiger Reserve in 1989 by joining both the Kalakad and Mundanthurai sanctuaries administered by the Mundanthurai division was the next major change. Two Kani Habitations became 'illegal occupations' because of their location in the core region of the reserve. The eco-development project implemented in 1992 to preserve biodiversity of the area restricted their fuel-collection. As in 1998, we find that more than 75 per cent of the Kanis were employed in agriculture or were coolies. Such occupations were purely seasonal in nature—hardly one or two months in a year. Around 11 per cent of them were employed as watchers in the forest department recruiting them from 1992. Out of the remaining 4 per cent employed in other occupations, special mention is required for the forest-guides who are employed in conducting researchers in flora and fauna around the forests. About 80 per cent of the educational achievements because of the presence of the Tribal Residential School can be considered to partly aid the 15 per cent of the occupations. The occupations of watchers and forest-guides indicate the selective dependence on the adivasi knowledge for using forest-resources in the new context. The problem of displacement of habitations in the core area of the forests had made them to form associations

to represent the dilemmas and struggles of each habitation. These associations had to enter into strategic relationship with the political parties for voicing the adivasi rights in forests.

Thus, in the colonial period, the forest department acquired its exclusive rights over forestland and produce accompanied by attempts at reallocating existing use-rights and, the selective dependence on the existing skills of forest-use for the expertise of the new mode of forest-resource utilisation. The incompleteness of the reallocation of existing use-rights disappeared in the legitimisation of the exclusive right over forestland and produce for public interest in conservation of catchment areas of river system irrigating the agricultural lands in the revenue district. The dependence on existing skills of forest use disappeared with the consideration that the sustaining of the supply of marketable forest produce was by scientific knowledge from above and outside deciding the regeneration of forests. The ponamdar forestry system, reallocating use-rights of adivasis over forestland as liabilities for their skills which were inputs to the new mode of forest resource utilisation, over which the forest department had exclusive rights, further contributed to the ambiguity. The use-rights of certain adivasis over forest land realised by migrating to the Singampatti Zamin and Travancore forests was also another option available. In the post-colonial period, the preservation of the tiger is the public interest that is invoked. The debate around the public interest led to questions around forest department's exclusive claim over forestland and output affecting use-rights over produce of the local population. The exclusive claim further led to the catering of the non-local demands from the forests affecting biological diversity. The adivasis in this area through their associations voice the specific dilemmas and struggles in each habitation around these lines in strategic relationship with political parties.

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