

Thesis (11)

Miscellaneous notes

15/7/93

enrich ~~the~~
improve

Emphasis on the thesis / discussions with WG on 14/6/93

- 1) Subsistence / Commercial resource use dichotomy.
- 2) Subsistence / Commercial resource use
with respect to land use Changes in area & variety
forests
water etc. etc. consequences.
- 3) Which human group has motivated these changes?
- 4) How have the other human groups adjusted to these changes.

While we realise that the historical data base is patchy, we should try to elaborate equally different aspects / resources and their resource use.

Madhav plateau : water resource.

Singur P : Paebration

Attappali P : Access regimes

Nilambur P : Forest resource use.

Waynaad P : Migrations / disease environment etc.

Coimbatore P : Peripherical area.

Decide on referencing styles

Bibliographic style

Check w Raj

Use Chicago style }

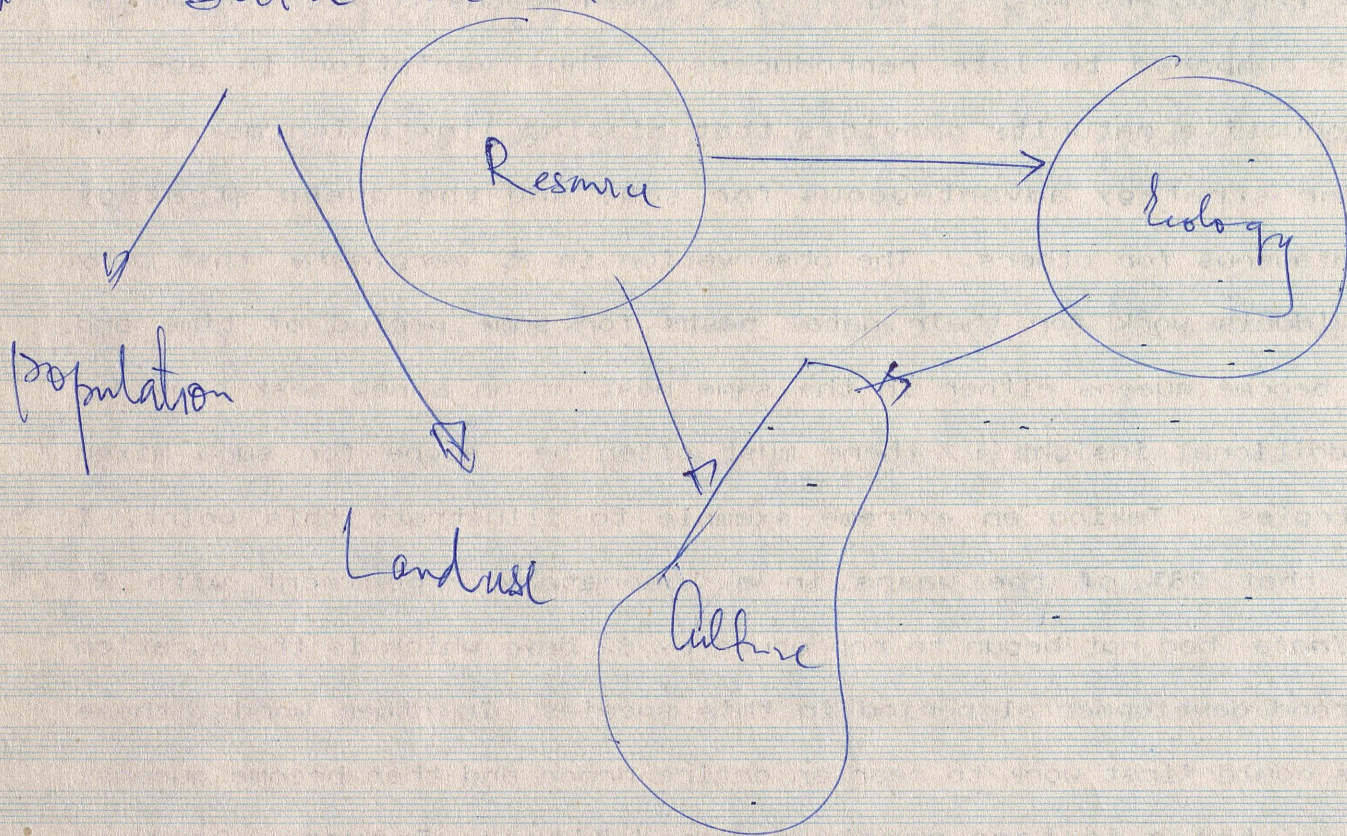
ie. Ref. (Author, year)

eg ⇒ (Ranganathan, 1930)

* Verbal Model of Resource use in BPT zone
kinbaga & Relations.

* Graphical Models of Resource use in BPT zone

* Data on trends.



* Time Charts.

Objectives of the Study

* To understand interrelations & linkages between various parameters

* To understand the processes of ecological change and the sequence leading to the present scenario.


* To understand man-nature interactions

minimum charter { * To detail a dialogue between human groups and their natural environment (Buhar's paper); and establish the dynamic relationships between environment and culture.

* Contribute to the Nilgiri Biosphere Reserve Conservation programme.

I have relied on well-known and intuitive patterns of relationships between different aspects and parameters. The study attempts to look at the whole spectrum of relationships between resource, ecology and culture for a particular geographical area & during a the historical period of c. 200yrs. 1800-1990

Problems & Prospects in NBR

The ecosystems people, the indigenous inhabitants ~~at~~ still continue to access the ~~resources~~ and natural forests of the area, although they are completely subservient to the commercial activities to seek their livelihoods. Their knowledge systems and their understanding of the forests ~~and~~ are thus still active ~~as~~ since they continue to depend on these natural areas to augment their food ~~and~~ other ~~basic~~ subsistence necessities. The recreation of forests by the colonial state and its continuance by the modern Indian state have helped ^{maintain} ~~the destruction of~~ these ^{patches of} natural areas from the expansion of agriculture and the immigrations of people. 

Of these ecosystems people are the only groups

THE ROUTE TO EUSOCIALITY

in the local areas who have an interest in the conservation of natural areas and its biodiversity. ~~that they use for their livelihoods~~, because of their close interactions with the forests and their subsistence dependence on the biodiversity. However, due to their marginalisation, during the modern period, in ~~and they have~~ they have many areas of NBR, they have been used to exploit the forests for the commercial needs of the larger economy. Thus, they ~~have~~ cut fuelwood and load them to markets in towns; labour in pastoral activity ~~for herds~~ by maintaining large livestock populations for the larger economy; and involve as labour in the illicit ~~tree~~ timber felling and sandalwood smuggling.

~~This partnership and cooperation with the state would help maintain these natural areas and their~~

~~biobiodiversity.~~

The State has been unable to use the traditional methods of policing, threat and coercion to halt ~~the~~ these increasing pressures on these forests, and enhance the biodiversity of natural and degraded areas.

Increasing pressures ~~on~~ of human populations for their subsistence demands, of biomass; and ~~on~~ ~~some~~ increased commercial demands have brought about a

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БИОДИВЕРСИТЕТ

Thesis Chapters

Preface : The organization of the thesis.

Part I : The Context & Setting for Study

Introduction

Setting

Framework

Methods.

Part II : Evidence & Experiences.

	SP		
	WP		
	NIP		
	AP		
	NP		
	CP		

Part III : The Broadest Patterns & Conclusions of the Study

Part IV ~~Epilogue~~ Epilogue : Problems & Prospects

Appendix



Objectives of the Study:

* While there are many intuitive & obvious solutions or options to the situation, when the historical fact proceeds along a direction and not the others, it ~~also~~ leads to some insight and useful ~~result~~ result to the processes involved in ecological change.

* Internal and External conditions or states determine the determine the options to a situation in the R-E-C domain (Grassman, Moench).

Abbreviations

Habitation surveys U

Oral Histories OH

Malgoni Brochure Review NBR

Acknowledgements:

(10)
Schedule
11/28
29

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- * Dr. R. Subramaniam, for his enthusiasm and encouragement for the work
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- * To ~~Ramesh~~ Nambi, Rajasubhan and Chandan for editorial help.
- * Staff of the CES for support and favourable environment & support for my work

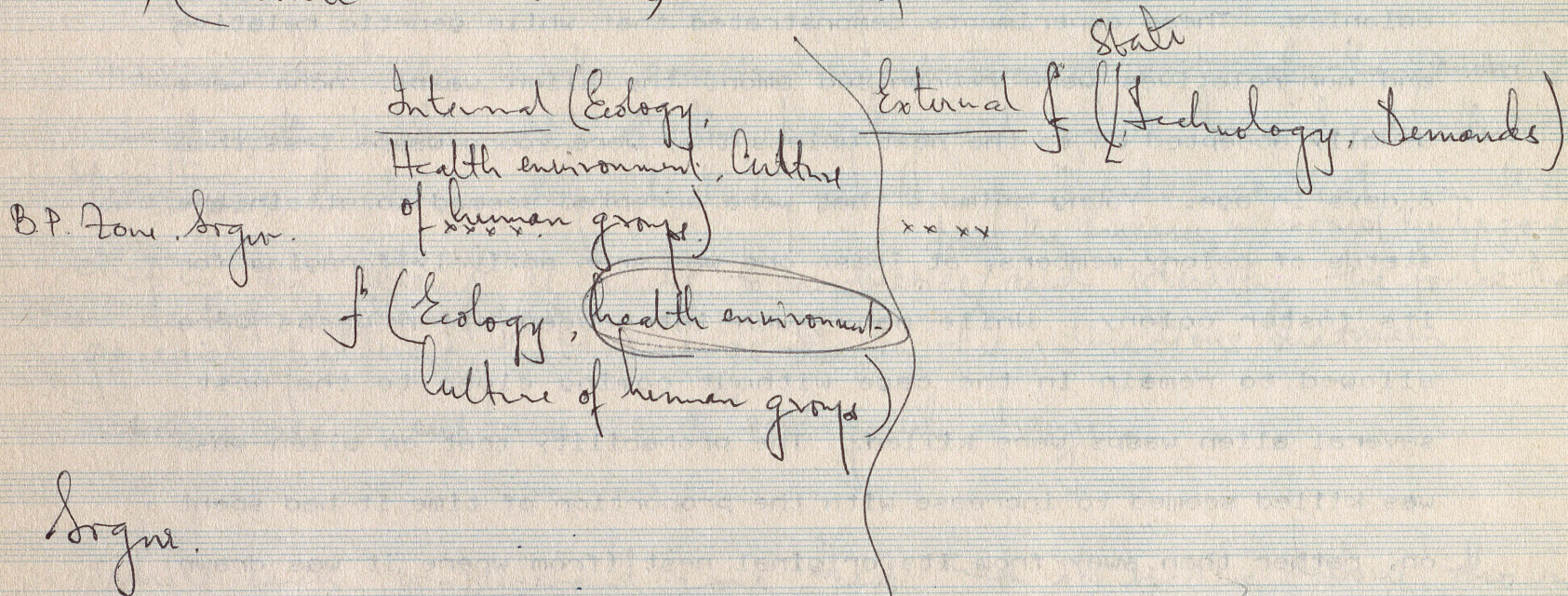
App 1-2
2-4
3-5
4-10
5-29
6-35

Conclusions

10.1) Introduction:

In complex systems: the comparative method among the six bp zones of the Nilgiris.

10.2) (Internal and External) Conditions for Commercialisation.



10.3) The Process of Commercialisation.

10.4) The Outcomes

Colours and names
Experimental / Expansion / Intensification
Sequential exploitation.

~~Human~~
Sustainability?
Human groups!

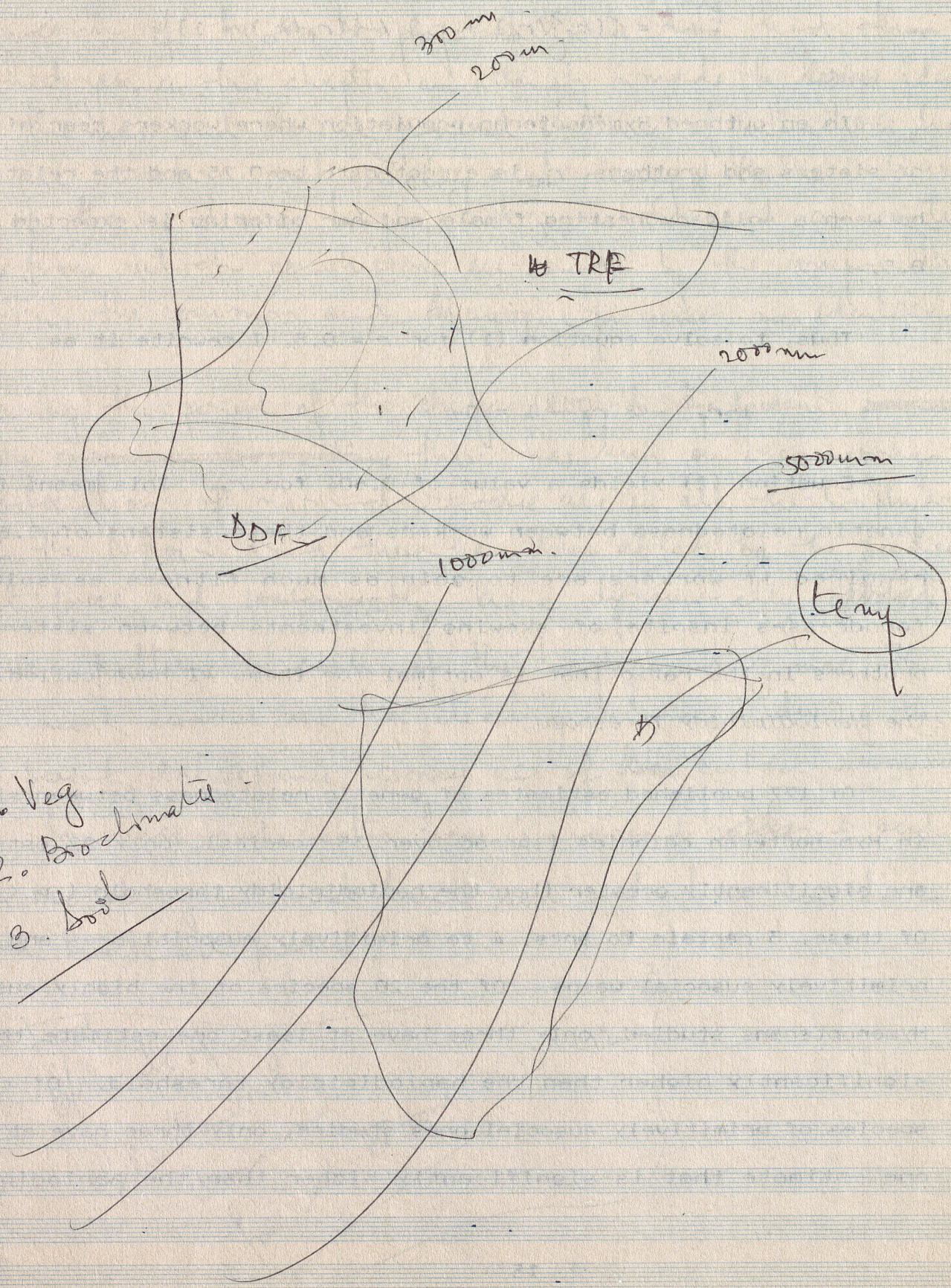
Introduction:

46
173

This chapter ~~is~~ draws out the ^{general} ~~main~~ conclusion of the study. ~~The main~~ The main processes of interactions between resource use, culture and environment ~~have~~ in each of the six biophysical zones have been ~~summarised~~ detailed and summarised in ~~each~~ the previous chapters. While each of the biophysical zones have had their ~~unique~~ ~~histories~~, in the concluding section of each of the ~~previous~~ chapters, the while each of the biophysical zones have had their ~~specific~~ ~~histories~~, dependent upon the particular context, in this ^{from the processes in each of the bi zones} chapter an attempt is made to synthesise/and identify the forces that drive ecological change and general patterns that emerge ~~the~~ in the interactions between resource use, culture and ecological change.

While each biophysical zone had had its specific history, ~~the~~ in this chapter, an attempt is made to identify ~~the general~~ patterns that ~~emerge~~ in the understand the forces that drive ecological change and ~~the general~~ identify general patterns that emerge in the interactions between resource use, culture and ecological change. In this complex domain of resource, culture and ecology, the ^{experiences of these six diverse} biophysical zones are used as ~~situations~~ contextual situations from which conclusions are made by the comparative method. Thus, the common and dissimilar

Magnum, Ann, Diversity indices.



1. Veg.
2. Bioclimates
3. Soil

processes are identified and

While each of the six biophysical zones ~~have~~ ^{has} had ~~their~~ ^{its} specific histories, in this chapter an attempt is made to ~~describe~~ identify common themes and derive general patterns of interactions between resource use, culture and ecological change. In the individual histories of the six diverse biophysical zones are used as contextual situations from which conclusions are made by the comparative method. Thus the common and ~~in~~ unique processes are identified and

During the period of the study, 1800 to the present, ~~resource use patterns~~ ~~resource use patterns~~ there has been an increasing commercialisation of natural resource use in all the biophysical zones of the Nilgiri area. These have been added by the permeation of market forces, and ~~consequently~~ ^{changed} have dynamically ~~altered~~ the ~~resource use patterns~~ resource use patterns in each of the biophysical zones. Thus, while commercial resource use has steadily increased during the historical period, subsistence resource use of ~~the~~ certain resources like fuelwood biomass and water have increased ~~whereas~~ and subsistence use of agricultural land and pastoralism has decreased during the historical period.

Time
Scales of
Subsistence &
Commercial
for each B.P. zone $6 \times 2 = 12$

800 x
200
60,000

The next three sections of the Conclusions examine the conditions for commercialization, the processes of commercialization and the outcomes of commercialization from the experiences and ~~other~~ evidences of ~~each of the~~ ~~before~~ six biophysical zones of the Niugini area.

Resource Use:
Conditions for Commercialization:

Commercialization of natural resources has been in a dynamic process dependent upon the internal and external conditions of each of the biophysical zones. The internal conditions include the resource endowments that are the biotic and abiotic resources of the area; the human groups and their culture.

Time frame

	Internal				External		
	Environment	Human groups	Access	Health	Demands	State	Technology
Sigun Plateau	low rainfall poor soils savanna-woodland vegetation	low population of ecosystem people	little private lands	Malinal	for pastoral products	Regional marketing cooperatives	Transportation infrastructure
Niugini highland							

It is in the low-rainfall areas commercialisation has been by the pastoral mode, while in the high-rainfall areas it has been by the gathering, agricultural & plantation mode.

Each of these parameters has been changing through the historical period and the relationships between them have shaped the patterns of commercial resource use.

Along the ~~resource~~ resource endowments axis, ~~there~~ there has been a mapping between resource endowments and ~~the~~ resource commercialisation, ~~low rainfall semi-arid tracts~~ the process of commercialisation and intensification of resource use has been slower in low rainfall semi-arid tracts, like the Logos Plateau. In unique environments like the montane bio-climatic zone of the Ndingi hills, commercialisation ^{one initiated} has been rapid in extent and intensity.

BP Zone	Resource Endowment	Commercial Res. Use
S.P.	Low rainfall, ^{poor} moderate soils Forested	Pastoral Mode Gathering Harvesting of Sandal & tsk.
NWP	Moderate PE Forested	Plantation crops like coffee, pepper, ginger. Gathering Harvesting of timber
NA	High PE Forested	Plantation ^{crops like} Rubber, Coconut Gathering Harvesting of timber & m.f.f.
AP	High / low Rainfall Forested	Plantation crops like coffee, pepper, rubber, Harvesting of timber & fuelwood.

Elevation	Resource endowments	Commercial Res. Use
Ng Plateau	Unique montane environ- ment.	Specialised plantation and agricultural produce like tea & temperate crops
Combs. Plains.	Low rainfall Forested	Pastoral Harvest of timber and fuelwood.

Human groups and their culture

The inhabitants of the biophysical zone have been the most significant agents of environment change. In zones with a ~~low~~ population ~~density~~ of "eco-systems people" subsisting by hunting-gathering and shifting-cultivation, commercialisation of natural resources, ^{control of resources by the bourgeoisie people and} follows restriction of access ~~of~~ to resources for these groups. This has ~~reduced~~ the restriction of access to eco-systems people & marginalised them as and ^{induces} ~~forces~~ them to ~~become~~ wage labour for the commercial extraction of resources from the area. In the ~~settled-agricultural areas~~, areas with human groups subsisting by settled agriculture, commercialisation follows land survey and settlement; and the extraction of agricultural surplus by the state in the form of money. ~~The commercialisation of pastoralism and the~~ ~~the~~ ~~inducement~~ of prebial groups in commercialisation ^{has been} caused by two factors. The breakdown of traditional exchange systems between different groups caused by the influence of the

market economy. This ~~to~~ induces the pastoral groups to exchange their products in the market. And, market demands for pastoral products.

DP. Zone	Human groups	Conditions for Commercial Recurrence
Sogou Plateau	Hunting-gathering & shifting cultivation.	Recreation of forests by the state restricting access.
N-W- Plateau	"	Recreation of forests by the state; land acquisition by immigrants
N- Plain	"	Recreation of F by state
A- Plate.	"	"
NS- Plateau.	Settled Agricultural Pastoral Hunting gathering shifting-cultivation	land settlement & extraction of surplus by land revenue. → Break down of food → land acquisition by immigrants & settled agriculturists.
C. P.		

Access Regimes

The initial and the process of Commercialisation of natural resources is dependent on the nature of control over resources. In the Nilgiri area, three types of resource control regimes are identified that have had influence on the conditions and the process of commercialisation. In areas like the Alappadi and the Nilgiri-Wynnad) where traditional control over resources, resource ~~has~~ ^{fluxes} has been more localized and has impeded the commercialisation process. In areas of State control over resources, commercialisation has been for in the nature of goods and services for the State ^{the monopoly,} and the larger economy. In individual control over resources, ~~has been~~ commercialisation has been dynamic, responsive to immediate market ~~the~~ variations.

State
Individual
Private

BP Zone	Access Regimes	Conditions for Commercialisation
Sogru Plateau	State controlled.	Extraction of timber, mfp.
	Individual:	Pastoralism.
W-Wynnad.	State	Timber.
	Individual	Plantation Crops.
	Traditional.	Limited Customary Exchange between groups.

The health environment in the Nilgiri area has been a significant factor in creating conditions for commercialisation. ~~While~~ The Nilgiri plateau was a favourable and healthy environment for the European colonisers. Thus, commercialisation by the State and the ruling elite ~~was~~ ~~was~~ ~~was~~ spread rapidly. In the other biophysical zones commercialisation ~~was~~ followed the ~~spread~~ control of Malawa and the consequent immigration of people.

<u>BP Zone</u>	<u>Disease Environment</u>	<u>Conditions for Commercialisation</u>
High P.	Malawa	Malawa controlled in 1950 inducing immigration.
NW P	"	"
N P	"	"
AD	"	"
ND	Favourable for elite Cool, temperate No tropical diseases.	Rapid commercialisation by elite. Favourable climate for elite.
CB	Malawa.	Malawa.

External Conditions

The external conditions of commercialization include the role of the state and its policies; the technology, and market demands. Over the historical period, two major periods of state policy is identified: the Colonial period and the Modern Period. These also form the temporal substructure for the study. The Colonial period is characterised by an increase in extraction of revenue by the state ^{concessions to the} and the use of resources for colonial expansion. The Modern period is characterised by the increasing use of state resources for industrial development ~~and~~ and programme of development to ~~increase~~ increase incomes by commercialization of ~~a~~ resource use.

Bottom	State Policy	Commercial R.S.
Signor.	Colonial Period	
	Modern Period	
Signor P-	Forestry Resources	Pastoralism
N-W P	Forestry	Conservation/Plantations
NP	Limited Forestry	Forestry
AP		Conservation
NP	Plantation/H-E P	Plantations/H-E P
CD	Forestry	Conservation

Market demand

Technology

Resource Use Extraction.

}}

Process of Commercialization?

provide the ^{mechanisms} for commercial resource use. While ~~stating~~ that these internal and external conditions are dynamic and constantly changing over the life span period

~~While~~ The internal and external ~~conditions for commercialization resource use were discussed in the previous section,~~ in this section the process of commercial resource extraction is discussed.

Sequential Exploitation

}

The experimental phase is the initial period of sequential exploitation. [This phase is elaborated and clearly identifiable in isolated ecosystems, like the Nilgiri plateau; the introduction of new ~~crop~~ ^{elaborated and} beta; or to]

This phase is clearly identifiable in isolated ecosystems ~~like the Nilgiri plateau~~ ^{into an area}; during introductions of new beta; or accompanied with the migration of human groups into an area. The experimental phase is not clearly defined in situations of harvest of natural resources from an area like the ~~export sequential~~ exploitation of ~~forest resources~~ from natural forests.

The expansion phase ~~of~~ of commercial resource use ~~could be in spatial extent~~; resource domain follows ~~the~~ a successful experimental phase; ~~and the benefit of a natural resource~~. The expansion of commercial resource use could be in ~~an~~ spatial extent; in resource domain, and from ~~more~~ more favourable sites to less favourable sites.

Identifiable

Outcomes of Commercialization:-

Control Use.

The pattern of sequential exploitation of natural resources has two possible outcomes, levels of exploitation reach their spatial extent, intensity and resource limits, and are maintained

In this section, the outcomes of the commercialization of natural resources is examined, from the viewpoint of resources and from the viewpoint of human groups. From a resource and environment perspective, the sequential exploitation of natural resources has two possible outcomes, levels of exploitation reach their spatial extent, intensity and resource limits, and are maintained at such levels; or, they cause resource depletions and exhaustions leading to shifts in resource use. In the Nilgiri area, both these processes are evidenced.

	Exp	High lands
Orissa P.	Teak, Sandal, Bamboo Grazing lands.	
N-W P.	Timber	Horticulture. Plantation. Tea & Coffee.
NP		Forest Plantations Horticulture
AP.	Bro-mass.	Horticulture.
NP	Potato cropping	Forest Plantations Tea Plantations
CP	Prewood / Sandal / Subsidiary water	

Resource exhaustion and shifts in resource use ~~are~~
~~can~~ occur in situations where attempts at intensification
 has been ~~unsuccessful~~ unsuccessful; ~~and common~~ in
~~common property resources~~ where the

control
the The pattern of sequential exploitation of resource use had
 consequences on the human groups and their culture in the Ndjini
 area. The "ecosystems people" consisting of hunting-gatherers and
 shifting-cultivators, had moved into the area during the pre-colonial
 period. They had traditional relationships with other agricultural
 groups and had territorial control over a region from which they
 derived their subsistence resources. Commercialization, ~~abstracted~~ ~~them~~
~~was~~ initiated by changes in access regimes alienated them from their
 resource base and marginalises them to wage labour, ~~for~~ for
 commodity production. ~~The "biosphere people",~~

~~PPRA~~ The settled agriculturists have expanded ~~resource~~
 base and turned to ~~commercial~~ agriculture.

~~The settled agriculturists have been driven into commercial agriculture,~~
~~by the~~ land settlements and the extraction of surplus by ~~the~~ ^{national}

The "biosphere people" are the human groups who control ^{exploited and} resources
 in the Ndjini area and have increasingly ^{traded} them in the
 the ~~global~~ markets. This group constitutes the settled agricultural groups
 and the immigrants who have ~~expanded~~ expanded their resource bases
 in the Ndjini area. ~~The State~~ The State has initiated and facilitated
 the commercialization process by its policies. The land settlement has
 confined the settled agriculturists and released ~~land~~ other areas for
 has facilitated the immigration of human groups to expand their
 resource bases. The ~~land~~ ~~resources~~ extraction of ^{agricultural} surplus as land
 revenue

Memo

✓ Time Charts.

Maps.

References.

Corrections.

43 ~~3~~ Compilation w Appendix

AREAS

Logan P 281.25

N-W P 1048

NP 1686.46

Nil. P 285

AP

CP 750

→ 337.06

→ 722.25

→ 806.25

→ 325 sq km

→ 740 sq km + 90 = 830 sq km

→ 750 sq km

1920

1950

1980

18
20

830 sq km

525 sq km

Robert, J. Nutrient loss due to Export of Cattle Dung.
Thesis submitted to the Department of Environmental Science,
St. Joseph's College, Bangalore, 1989. unpublished.

Stein, Burton, Peasant State and Society in Medieval
South India, Oxford University Press, Delhi, 1980

Banga, P. M. Memoir on the Geology of the Neelgherry and
Koondah Mountains, in Madras Journal of Literature
and Science, No. 13, October 1836. pp 243-249

Anonymous, From official papers communicated to by Government.
Account of the Gold Mines in the Province of Malabar.
in Madras Journal of Literature and Science, No 32, 1847.
pp 154-181

Francis, 1905,

Fletcher, F. W. C., Sport on the Nilgiris and Wynnad. London:
Macmillan and Co. Ltd. London, 1911.

Ward, B.S. Geographical and Statistical Survey of the Madgherry Mountains, in Grigg, 1880, Manual of the Nilgiri District, Appendix 20, pp lx - lxxviii.

~~MCS.~~

Pandora, MCS. The political Economy of Agrarian Change: Mandhadrin 1880-1929. Sage Publications, New Delhi, 1990.

Deason, C.F.C. Prickly Pear and Cochineal Insect, Indian Forester, March 1934, Vol 60, pp 203-205.

Krishnan, M. An Ecological Survey of the Larger Mammals of Peninsular India: The Gaur, in Journal of the Bombay Natural History Society, Vol: 69, No. 2, pp 322-351, 1972.

Ranganathan

Jayadeva

References

Langferke, Hans J. von, *The Nilgiris: Weather and Climate of a mountain area in South India*, Franz Steiner Verlag, Weisbaden, 1977.

Champion & Seth - - - - -

Prabhakar and Pasad

Price, Sir Frederick, *Ootacamund, A History*, Government Press, Madras, 1908.

Survey of India 802, 580/10 - - - - -

~~W. H.~~ Noble, Williams, A. Nilgiri Prehistoric Remains in Paul Hockings (ed)

Blue Mountains: The Ethnography and Biogeography of a South Indian Region, Oxford University Press, Delhi, 1989.

pp. 102-132

Anon, 1990, MWLS.

Joseph, John, MWLS

Micro scale Research enriches &
supplements literature on economic development.

