

## CHAPTER 8

### Review, Findings & Recommendations

#### 8.1 Critical Analysis of the Study

In chapter one, the importance of CPR in rural economy throughout the world was highlighted in the course of our literature review. Based on the literature review we proposed four groups of hypothesis that was enquired into during the course of our work. Chapter two dealt extensively with the issue of property rights *vis-a-vis* common property resources. The market as an institution of allocation of resources fails to ensure optimal allocation of usufructs and instead community management of natural resources based on common property rights can be a better alternative. The main advantage of the CPR system of management is in its ability to reduce transaction costs, close monitoring and wealth of traditional knowledge.

Rural communities whose dependence on forests is high appraise both resource stocks and flows on *usufruct* principles, while Forest Departments which focus on valuing steady-capital flows use *market* principles. This difference in valuation principles results in non-identical valuations of the same resource leading to conflict of interest between the State and rural community. Market transactions of natural resources fail to internalise the externalities involved in natural resources primarily because of a large part of the produce market is absent. The appropriate property rights structure for such resources are found to be the CPRs.

The third chapter makes a critical survey of the various forest policies in India. It also makes an assessment of the larger economy in general and, how forests policies promoted commercial interest at the cost of livelihood needs of the poor, in particular. In this chapter, we also identified the major lacunae in our forest policies. Our conservation efforts will remain a lip service as long as usufructuary needs of the poor is ignored. The success of conservation policies will be decided by how ably we can accommodate the needs of rural communities in our management programme.

The fourth chapter critically assess the economics of State forestry. From a simple conservation principle of maximum sustainable yield the State forestry has moved far away. It is based on maximisation of yield based on the principles of capital investment theory. However, in the long run this model of forestry becomes unsustainable especially because the rate of harvest exceeds the rate of replantation. This not only leads to a decrease in forests

cover but also in a huge loss of biodiversity as well because of monoculture plantations. Such loss of biodiversity in ecologically fragile zone like the Himalayas has adverse effect on the ecology of the country in general, and also on the livelihood of the local communities in the Himalayas.

The fifth chapter makes an assessment of the extent of forest cover in the Himalayas and the proximate causes for loss of forests over the last two centuries. The poor rural communities who have adopted to a mixed farming model finds it difficult to cope when there is a loss of forest cover. Comparing the differences in the three Himalayan zones we find that differences in forest access rights and property rights structures between different parts of the Himalaya exercise considerable influence on the nature of usufruct dependence of local communities. The depletion of forests cannot be stopped simply by enactment of more stringent laws, instead increasing rural access to viable alternatives to forest usufructs can help to reduce pressure on forests CPRs. One such viable alternative can be creation of fuelwood forests. The other and more importantly, a permanent solution to the problem shall be community ownership of forests i.e., CPR management system.

The sixth and seventh are basically chapters covering forests issues in the two districts of our case study. The large diversion of forests lands to tea industry and also for agriculture has been the main cause of loss of forests in the region. Added to this has been the pressure of population growth in two phases. In the first phase, people were encouraged to migrate due to dearth of labour in the region, and they were mostly agriculturists. The later expansion witnessed especially after 1970s, saw rapid proliferation of urban settlements in the region as well. The population has increased substantially in rural areas including areas close to forests. This has increased the pressure on forests usufructs manifold within a short duration of time. Forest management programmes like JFM have been introduced in this region along with the rest of the country, to stop the loss of forests with the help of community participation. But as our econometric results show that unless the well-being (real income) of the poor is substantially increased, the poor will continue to depend on forests usufruct for their living.

Though, justification for nationalisation of forests has been primarily based on two reasons, namely, improvement in the well-being of the rural community through internalisation of externalities and second, the concern for the ecology. That the latter has failed, is amply clear from the loss of forest cover in the country in general, and in Eastern Himalayas in particular. No improvement in the well-being of the forests villagers has taken place even after hundred

and forty years of nationalisation of forests and it also shows that community development has never been a serious issue in State Forestry.

Co-operation that is essential for community management may fail to develop when the resource is degraded and of low value. In other words, if the incentive to co-operate is low community management system may fail to evolve. The role of property rights in traditional subsistence system is no doubt important. However, external intervention without corresponding local legitimacy and credibility is likely to fail to evolve co-operation. Entrusting local communities as guardian of natural resources shall not eradicate poverty, but by doing so fluctuations in income of the poor can be smoothed to a large extent.

Usurpation of forests by the state ultimately results in an excess of shadow price over the market price for natural resources which leads to an underpricing of the final product. This amounts to subsidising of forest products for the rich, and the burden is passed on to the poor local community in the form of restriction imposition on access to forests. Various Working Plans in our study region had exclusive fuelwood circles for tea industry, while usufruct rights of the rural people were limited. Grazing permits were distributed to professional graziers in Darjeeling and Jalpaiguri, while rules relating to establishment of forest village fixed the number of cattle each household may keep. Again, special provisions are made to transfer lands to tea by-passing laws applicable to the rest of the country, while the traditional forest communities are placed under the *taungya* system, i.e., under temporary settlement

Depletion of the Himalayan forest especially in the Western and Eastern Himalayan region is more due to land-use policy of the State. While vast tracts of land were transferred to plantations, people were encouraged to migrate and settle in areas newly opened for agriculture at a much low rent. New settlements were encouraged to increase the supply of labour, who were in high demand both for forest and plantation works.

That the present forest management system (JFM) was found to be lowly rated by the twelve forests villages surveyed is not surprising. A forest management system must give high priority to the sustenance of the forests communities. It is only when people perceive that a management system is not adverse to their needs will it give rise to a possibility of co-operation between the villagers and Forest Department. This has serious implications for our forest management programmes.

### **8.1.1 What ails forest management strategies in India?**

Domestic biomass needs of the rural communities have never been seriously considered in the formulation of forest management strategies. They were ignored ever since the forests were nationalised in 1865. The case study in Darjeeling and Jalpaiguri districts of Eastern Himalayan region, establishes that even in the absence of commercial felling and successful quarantine of flow of timber through organised mafia rackets is achieved, the biomass needs of the rural people may lead to degradation of forests. In the absence of energy substitution, and with a rapidly rising population in the region, the legal extraction from forests is being substituted by increasing illegal entry and outflow. The detrimental effect of forcible biomass collection is visible particularly along forest areas adjacent to highways that adjoin the commercial centres. As fuel needs have multiplied and employment prospects have dwindled with the growth of the rural population, entry and collection of fuelwood and fodder from reserve forest areas has been on the rise, thus degrading the forests of the region.

In developing countries like India, where traditionally rural communities have been living in close harmony with nature, especially forests, the idea of alienation of humans from nature is socially not feasible. Instead, success of natural resource management in such society depends on how well the local communities have been integrated to the programme. Whether, all forest resources share the same property rights structure or not will depend on the extent of access rights committed. Thus while timber, fuelwood and other related forest resources may be turned into tradeable goods by regulated access, forest CPRs such as fodder, seeds and fruit may remain untransacted in the absence of a market for forest usufructs. While all forests and forest resources were CPRs when they were administered by the local communities, the situation changed materially after they passed into state ownership. An issue that has never been satisfactorily addressed by the state, concerns the customary rights of indigenous forest-dwelling communities. Although community forests are preserved in large areas in the North East, pressure of population, settlement-growth and declining forest cover have altered the public perception of these rights, and also of whether forests as such constitute *local* or *global* commons.

### **8.1.2 Community rights in forest: A review**

That state forestry has undoubtedly failed to increase the well-being of the poor is well known, a fact that has been accepted in the policy shift embodied in the six circulars of 1990. The present JFM policy, National Afforestation Policy [NAP] and other such policies

encourage people to participate in the programme, but fail to accept community rights over forests areas. From JFM it is now time that we create the necessary statutory provisions for moving towards community forest management framework, with full community rights to manage forests on the basis of their knowledge. This does not imply that the FD needs to be dissolved. It can work more in the lines of the Agriculture Department, providing valuable scientific inputs, engaging in active research and pass its benefits to the communities for improving the biomass of the country. The Indian Forest Act 1927 has specific provision on village forests (Chapter III of the Act) which need to be revived through fresh legislation assigning full security of tenure. Such conferment of rights may thus include full autonomy of the community in making-decisions *vis-à-vis* major and minor forest products.

### **8.1.3 Successful community management of natural resources in the Himalayas**

In Uttarakhand, transfer of rights to village communities has already been done through amendment of the section 28 of IFA, and results are quite encouraging. Nepal has successfully implemented the concept of community forests in the country (Baland *et.al*, 2009). The success of community institutional arrangement in North East India compared to other regions of the Himalayas has been attributed to the statutory provisions under the Sixth Schedule of the Constitution. Creating adequate statutory provisions is thus a prerequisite for the success of natural resource management under a CPR arrangement. Compared to other parts of the Himalayan regions, the survival of customary law institutions in the North East Himalaya appears to be more conducive to the maintenance of forest cover and forest quality. The increase in forest cover quality in the North East bears testimony to the above fact. The enactment of “The Schedule Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006” seems to be a step towards the right direction. However, few things require immediate attention. First, the term “gram shabha” which is assigned the initial responsibility to identify the rights has been subject to wrong interpretation and has been the standard delaying tactics in its implementation. Second, the Act is not solely or even primarily about individual land claims. Many of the rights, such as the right to minor forest produce, are to be exercised as a community. The most important sections of the Act *vis-a-vis* the community right to manage, protect and conserve forests, is under (sections 3(1) (i) and 5), the first step towards a genuinely democratic system of forest management. It is deliberate ploy by both the State and Central governments to deny or ignore these community rights and to instead treat the Act as if it is purely about individual land rights in one pretext or the other. A key aspect of the Act is to use and expand these community rights. It is rather

unfortunate that, though “scientific” forestry has survived more than hundred and forty years in India, forests have not.

## **8.2 Research findings and recommendations**

We have classified the research findings in line with our research hypothesis into four different groups.

### **8.2.1 Research findings relating to the development impact on forests**

Loss of forests in the study region during the last hundred years has been caused by a high rate of growth of population that has continuously increased the demand for subsistence needs from a limited stock of natural resource base. In addition to this, there is the loss of forest lands mainly through transfer of such lands to non-forest uses like tea and other plantations. The focus on the two districts used in our case study bears testimony to the fact that, loss of forest lands to tea has limited the possibility of agricultural expansion in areas under tea. Increase in population thus adversely affects the land-man ratio putting additional pressure on forest lands. The growth of population in Pulbazar area in Darjeeling subdivision has resulted in loss of forest cover over the last thirty years.

The loss of forest cover in the Kalimpong Forest Division since 1980s is a direct consequence of vast tracts of forest lands in the district being placed under the Forest Development Corporation [FDC] for commercial forestry. The forest policies have since its inception has considered its declared objective to meet the demands of the industries. Till 1980s, producing sleepers for the railways has been a major component of the output produced by state forests in India. From the WPs of different years for the various forests divisions in the two districts, a few important conclusions may be drawn:

1. One of the high priority objectives for drawing such elaborate plans was to ensure sufficient production of sleepers for the railways. Darjeeling Himalayan Railway and the Bengal Duars Railway in this region were not only buyers of sleepers but also served as line of exports for *sal* sleepers from the region;
2. Separate WC to produce fuelwood for tea plantations meant that the plans put commercial interests above the interests of the local communities. In 1901, the Mal WC was specifically made covering an area of 6107 acres to meet the demand for fuelwood from the tea-gardens in the *Duars*. The demand for fuelwood in tea gardens is for making of black tea i.e., for commercial purposes. In addition, over 250 sq. km.

in Darjeeling district and another 133 sq. km. in Jalpaiguri districts of forest lands have remained under were tea garden forests till 1964.

3. None of the WP for the forests in this region admits existence of any rights of the local communities. A little concession was given to people in *khasmahal* areas to graze their cattle at an elevation above 2500 metres. In contrast, while restriction was imposed on the grazing of cattle by local communities, professional grazers like Edward Keventer's continued to enjoy the privilege. It was only in 1966 that professional grazing was brought to a halt.
4. The WP agenda to transfer natural biomass cover to a single specie monoculture plantation follows directly from scientific forestry prescription that seeks to maximize the rent. However, the entire cost from loss of biodiversity is borne by the local communities.

The level of mechanisation in forest workings of this region has been traditionally very low until 1980s when FDC undertook the task of harvesting primarily. Forestry as such has been labour intensive activity that required a large number of labourers at a low price. The other two major economic activity *viz.* tea and agriculture also had a high demand for labour. Labour scarcity in the region was met through encouraging migration through some concessions. However, arrangements like *taungya* in the forests have been a wise ploy to exploit the labour in return for a limited or no costs. However, rapid increase in population in close vicinity of the forest boundaries has made it difficult to monitor the flow of output from the forests. As a response to this, JFM has been introduced not only to improve the forest cover, but also to use the vast pool of forest villagers in guarding the forests without any immediate financial liability. From *taungya* system which is highly exploitative to the present JFM system, the only common factor is reduction in cost of labour. While NREGS and other such employment programmes guarantee a daily wage of a Rs. 100/-, the wage rate for forest working is just Rs. 88/-.

Household fuelwood demand unlike commercial purposes is used to produce food. It thus needs to be seen whether rising per capita incomes in conjunction with population growth raise the demand for fuelwood energy in an income-elastic response. We have considered the food-consumption income  $[C/Y]$  ratio in lieu of total income. Its advantage has been explained in the earlier chapter. The regression results show that relation between dependence on fuelwood energy and consumption-income ratio is positive and statistically

significant. The implication is that only when increase in income leads to a fall in  $C/Y$  ratio that the demand for fuelwood will reduce. Alternative regressions considering income as an explanatory variable produced a negative coefficient value of income but the results were not significant. This has a strong implication for policy prescription, that increase in real income of the HH can check the rising demand for fuelwood. However, this result is to be understood in the context of the present energy scenario of the country. Increase in real income does not imply reduction in per-capita energy needs, instead it is just the opposite of that. This result thus implies a switch over to alternative fuel or efficient fuel sources especially commercial fuel.

Reduction in fuelwood is easier said than done, because increase in rural income is not possible within a short span of time. Instead as an immediate response to the crisis a two pronged strategy need to be taken on a priority basis- first, subsidised fuel like LPG and Kerosene needs to be provided to the rural HHs, and second, increase in income through employment generating schemes like NREGS. In addition, real income can be increased through a redistribution of assets in favour of the poor in a FV it means transfer of ownership rights of forest lands to the people. There are ample studies that suggest people have responded favourably after transfer of rural assets especially land. However, the forest lands has its own special use i.e.. conservation of biodiversity as well as to meet the needs of the people.

The solution to this dual objective does not require a further stepping up of enforcement, but in a reconsideration of the CPR question as a whole. Reconciliation would best be achieved through institution of private property rights to forests allowing forest management to be vested with the community, while resource extractions are mediated through the markets. This prescription is based on the Coasian bargaining approach, which not only requires a well defined property rights structure but the rights should be enforceable as well. In the present context, the ownership of forests is defined, but rights are not enforceable because such resources have been turned into a *de facto* common property by the people. However, as an alternative privatisation of the forests at a very low level like coupe may not be economically a viable option. However, large size of the forests may be economically beneficial, but ownership of forests by a single private individual or corporate entity has its own demerits. Instead, to reap the benefits of economies of scale in forest production, community ownership is a viable option with the corresponding externalities being internalised.

### 8.2.2 Research findings related to policy issues

A large area under forests in the Eastern Himalayas has been transferred to plantations using special statutory provisions. In the Western Himalayas such transfers were made to mining companies. Besides, with proliferation of settlements in the hills there has been large scale transfer of lands for agriculture also. In Kalimpong subdivision immigration was encouraged through incentive of agriculture lands. However, the forests in North-East Himalayas have a satisfactory cover due to special provisions of the constitution protecting the institution of CPR. The Sixth Schedule of the constitution forbids any transfer of community lands for other purposes. Thus, forest depletion in the Himalaya has been closely associated with the transfer of forest lands into alternative uses.

With usurpation of community rights over forests through a piece of legislation, the Government had the monopoly of land use decision. Approximately 600 sq. km. of forests lands has been leased to tea in Jalpaiguri district and another 200 sq. km. in Darjeeling district, making it almost 10 per cent of the total reported area. Thus, leasing out of forest 'wastelands' for tea plantations have been a major cause for the loss of forest areas in this region. The exact measure of forest lands that has been transferred to agriculture and urban settlement by the state is difficult to estimate. However, it can be safely concluded that the two districts had extensive forest covers before State Forestry was introduced to the region. The local people were forests dependent communities, who practised *jhum* instead of commercial agriculture. The vast stretch of land in the *Duars* and Darjeeling district has thus been opened up for agriculture only after State intervention in the region.

Vast areas of forests were cleared in an unsustainable manner when natural forests were abundant in the region. To extract a single tree of high commercial value at least few more trees of less value surrounding it were felled. Even before the first WP for the forest divisions were made, the extraction was done by contractors, who mercilessly destroyed all trees and undergrowth to make way for a larger valuable tree under the piece rate system. The official outputs figures of these forests therefore, was only a part of the total biomass destroyed in the process.

Under the WP system, detailed estimates of expenses and revenue to be generated from opening up of new coupes for exploitation had to be placed. Expenses included cost of construction of lines of export (mostly roads), labour charges, administrative charges etc., but there is no mention about expenses on replantation work once the area is cleared of forests.

For many years, as late as 1912, the forester's relied on natural regeneration mostly (see Grieve's Plan for Darjeeling Forest Division). This date is also important because vast tracts of forest lands that were opened up by that time were being transferred to tea especially. Therefore, the foresters' never had the urgency to regenerate forests. Labour were mostly engaged to cut trees and hardly spared to regenerate forests. The volume of *sal* timber produce from such a small region has caught the attention of writers like Flint (1997).

The policy of the State Forest Department has been to keep the expenditure on labour at a minimum. The system of *taungya* had specifically served this purpose. Lowering price of a factor of production results in a distortion of input mix resulting in the use of the factor in production in large excess. At low wage rate (in *taungya* system it is almost zero) the corresponding equilibrium marginal physical productivity of labour is also low. This means labourers were forced to work longer hours and at times without interruption. Thus, the colonial forestry has been exploitative and obstructive to any progress towards competitive labour market.

Even after independence things did not improve. However, by this time barring few compartments almost all forest areas was under plantation (single valuable species). Clear felling methods were thus employed and even selection felling was possible because of the increased distance between each tree, making it economical to extract trees even when wage rates were higher. But two things suffered, first, illegal entrants could not be stopped from entering the forests because of the high cost involved in monitoring, and secondly re-plantation, as returns from expenditure incurred in the present, is received at some future point of time. This is where participatory management programmes like JFM are introduced as a desperate reaction to acute ecological pressure falling on the forest environment. Or else, how can the Government justify assigning only the degraded forest area for revival under the scheme? Such participatory arrangements are mixed bags in the sense that few instances of its success can<sup>not</sup> be considered as a panacea for all forest regions of the country. Each region has its own specific factors, cultural & social history, diversified ethnic composition and other dynamics of natural resource use. Moreover, JFM is also not a programme of undoing the wrongs of the past. It just ensures participation to attain the desired objectives of State Forestry by agreeing to concede a little more from the share of profit. The participatory management and partial social control of forest resources has only been conceded to get impoverished and illiterate communities to reforest degraded forest land without demanding compensation for their labours. Therefore, participatory management programmes like JFM

represents a partial concession made to increase local democracy and local empowerment of indigenous communities who are now demanding control of their local resources.

### **8.2.3 Research findings relating to CPRs & Participatory RMS Systems**

Our enquiry about the dependence of hill populations on regional forests showed that it is substantially high (the regional coefficient dummy has been found to positive and significant); the causes are found as much in agro-climatic factors as in the nature of hill agriculture. That land is scarce is evident from the average size of land holding in the hills, a fact that is corroborated both from Agriculture Census, and also from our survey data. Small agriculture holding and low crop yields account for wide prevalence of mixed farming in mountain regions like the Himalaya. Switching over to cash crop cultivation is also not a viable option, because of problems of food, fodder and fuel security.

The Himalayan farming system combines cultivation with livestock farming. It is a characteristic of such a system in which heavy forest-dependence exists for meeting energy and animal husbandry requirements within it. Local communities in the hills who for centuries together have lived in close contact with neighbouring biodiversity have rich knowledge about the utility of the usufruct of the surrounding forests, including various eatables and herbs, medicinal plants, etc., besides other more commonly known NTFPs. This symbiotic relationship that has evolved for centuries requires that these communities have open access to these resources for their sustenance. Mere strengthening of statutory law to forests without increasing rural access to viable alternatives of forest usufructs, cannot relieve current depletion pressures on CPR resources. The survival of forests in the North-East under CPR arrangements shows that denial or sacrifice of potential roles of the community in managing CPRs because of the institution of the state forestry system, has primarily been responsible for creating *free rider* situations where forest resources are exploited without let or hindrance.

### **8.2.4 Research findings relating to forest resource markets**

Valuation of resource flows on market principles alone eventually justifies very high rates of extraction as resource scarcity increases, leading ultimately to the possibility of exhaustion. Certain other difficulties also arise when market mechanisms are applied to equilibrate supply and demand within forest resource systems. Firstly, as renewable resources, forests yield additional future returns when preserved *in situ*. Secondly, a large part of forest produce comprising collected usufructs will be nontradeable, where price mechanisms do not operate.

Difficulties also arise in administering forests under market-based property rights institutions since market trade ignores the *transfer* and *reciprocal* externalities between generations, and also does not take into account of the fact that the resources that are preserved (*i.e* that are not extracted) also yield returns.

The presence of externality results in a gross under-valuation of the benefits from forests. State forestry has evolved on the principle of maximising the value of timber which is a part of the total economic value of the forests. As a consequence, a major area of conflict between the forester and local communities has been on the measurement of benefits that flow out of forests. There is no uniformity in the computation of benefit that flow from forests located in different agro-climatic regions, and also the benefits from natural forests is different from a plantation (mono crop like teak). Moreover, with the increase in scientific knowledge, it is now well known that the benefits from forests is just not limited to timber and NTFPs. Another aspect in forest benefit valuation is the property right governing the use of the forests. Thus, variation in property rights structure demands alternative methods to value the forests.

People living on the forest-fringes with greater livelihood and usufruct dependence on the forest, appraise both resource stocks and flows on *usufruct* principles, while FDs which focus on valuing steady-state flows use *market* principles. This difference in valuation principles results in non-identical valuations of the same resource. Considering the differences between usufruct demands and commercial demands on forest resources, the structure of resource markets is *asymmetric* due to the presence of externalities. The asymmetric market leads to non-identical valuation of the same natural resource, which therefore, requires assigning of property rights with adequate incentives for a symmetric market to evolve. Ecological conservation of forests cannot be achieved through statutory regulations but through creation of an appropriate property rights structure with adequate incentives that can help to mitigate ecological losses.

### **8.3 Direction for future forests policy in India: A Prescription**

The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, is a policy in the right direction. However, this Act is not likely to be interpreted as a piece of legislation that guarantees individual property rights instead of community property rights. The conferment of tenure rights to agriculture and homestead land may bring joy to the individual households, but the gains are more if instead the community owns the

land. The success story of forest communities in the North-East should be in our mind. As individuals, these marginalised community people are vulnerable to external market forces. Collective ownership of assets and resources place them in a much safer zone. Though much damage has been done to their community way of life, and their traditional knowledge base have eroded to a larger extent, yet such societies have adapted themselves well under changing circumstances. Therefore, a reconsideration of the property rights in forests of India in general and that in the Himalayas, needs immediate attention.

The fear of the FD that some thousand square kilometres of forests will be destroyed if ownership of forests is transferred to the communities is totally unfounded. That destruction and loss of forests cover is an outcome of wrong policies in the past needs no further elaboration. The poor people who draws for sustenance is in no way comparable with that class of people, whose appetite for consumption is never satiated. If land reforms programme could be so highly successful in many parts of the world, then there is no reason to believe why such a similar redistribution programme would fail to succeed in forests lands. We have quoted instances where such reforms of property rights in forests have succeeded. FD is the biggest landlord in India, and its arguments sound as hollow as those we heard during 1950s at the time of abolition of the Zamindari system in India.

However, a limited monitoring of the FD particularly with respect to flow of major produce will be required along similar lines during transactions of real estates. The FD should keep a vigil during the initial years of transition, so that the leased forest lands are not put to any alternative use other than growing forests.

#### **8.4 Issues for further research**

Certain issues that need further research especially related to the question of CPRs are:

1. Whether, rising costs of resource preservation can result in a change in valuations of resources, as a result of which forest CPRs which have previously been well conserved, are exploited at accelerated rates.
2. That the social priorities of ecological conservation of forests and forest biodiversity cannot be internalised in market transactions, and remain an externality under both CPR and private property rights regimes.

Besides, another potential area of research is to enquire into the outcome of a resource market structure that operate with a large number of firms under community ownership, producing homogenous commodities (like timber and NTFPs). This competitive market structure for forests resources as against state monopoly appears to be quite an exciting area of research.