Why, Who, and How of Jointness in Joint Forest Management: Theoretical considerations and empirical insights from the Western Ghats of Karnataka

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1. Introduction

Joint Forest Management (JFM) has become the new catchphrase in forest management in India today, being regarded as a beacon of hope by the pro-people lobby and as a donor-imposed fashion by many hardline foresters. Neither characterization is entirely inaccurate, but JFM is probably best seen as an experiment with institutional arrangements for achieving the goals of forest policy; an experiment that is now being attempted in at least 15 states of the country, covering most of the forested regions.

There is now an extensive literature on the ongoing experiments and experiences with JFM in India (SPWD, 1993; Poffenberger and McGean, 1996, Wasteland News, various issues). Much of the discussion naturally focuses on specifics--the manner in which the concept is being implemented in various regions and concerns therein. There are also attempts to draw some generalizations from these specific experiences on the ecological, economic or institutional issues (the categorization currently in vogue) of JFM.

I shall focus here on the conceptual basis of JFM, not on any of its specific implementations. In keeping with the objectives of this workshop, I shall focus particularly on the question of "jointness" in management, and shall examine three broad questions: *the why, who, and how of joint management*. I shall begin by presenting what appear to be the currently accepted answers to these questions. I shall then use a combination of theoretical and empirical arguments (the latter based largely on ongoing research in the Western Ghats forests of Karnataka) to critically examine these answers and to present an alternative perspective.

2. The accepted logic of JFM

In a country whose last 150 years are a history of overwhelming state control over forests, one could ask the question: Why should there be joint management of forests? A simple-minded answer would be that joint management is required because the current system of management has failed to arrest the degradation of forests in India, the basic objective of forest policy. And how is this current system to be characterised, and distinguished from *joint* management? It will be answered that the current system is a patchwork of *full state control* (Reserve Forests, Sanctuaries and National Parks) in certain areas and *open-access* in others (what are typically classified as Protected or Unclassed Forests): systems wherein the local users are either at loggerheads with the

state in the former or with each other in the latter.[1] Given the presence of human settlements in virtually all pockets of the forests in the subcontinent, and the presumed high dependence that most of these settlements on the forests for subsistence and income, it seems obvious that forests degrade because of the practical impossibility of the state being able to protect them on its own in state-controlled areas on the one hand and because of the "tragedy-of-the-commons" that obtains in those areas where local populations are given access on the other.

JFM is then seen as a means of solving both these problems: setting up a community level institution that will regulate the behaviour of individual members of the community after clear demarcation of access rights between villages, and that will also lighten the burden of the forest department by ensuring no further predation by the community on state-controlled lands and even take on protection responsibilities in return for some legitimate share in the produce. Thus, the "joining of hands" envisaged in JFM--what I call the "who" of JFM--is (a) between the individual villagers into a community of forest users, and (b) between this community and the forest department (as a representative of the state).

Underpinning this proposed solution to the problem of forest degradation are a number of empirical assumptions about the local communities and their relationship with forests:
1) that the pre-JFM regime of forest rights is indeed simply one of either full state control or open access, a virtually blank slate on which the new regime of rights can be written;
2) that the "community" exists as a cohesive unit waiting to retake control over uncultivated lands (control it had supposedly exerted in pre-British times); and
3) that individual villagers generally have strong interests in using the forests and hence will participate in JFM, or where interest may be originally insufficient the "new" rights in forest products conceded by the state will be adequate to generate sufficient interest.

3. Why joint management?

The arguments for having jointness of either kind--locally communal management and state-local cooperation--are rooted in the interdependencies created by the nature of the forest ecosystem. However, closer scrutiny is required to see if they necessarily lead us to the particular institutional form currently adopted in JFM.

3.1 Theoretical considerations from an environmental perspective

Let us consider how the nature of any environmental problem determines the kind of institution required for its management.[2] First, one must consider whether there are any externalities associated with an individual's environmental activity (in this case, forest use). If there are no externalities, or if a resource is fully and permanently *divisible*, then there are no inter-personal impacts or connections, in which case no regulatory institution is required. If one farmer's withdrawal of groundwater did not affect the water level in

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[1] Supporters of JFM have contrasted it from conventional management on many dimensions, e.g., multiple-product versus timber-oriented, multi-species versus monocultural, subsistence versus commercial, etc. (SPWD, 1992). From an institutional perspective, however, I would point out that these differences *follow* from the shift in the management system from state control to joint control.

[2] I follow here the approach of Arnold and Stewart (1989); see also Fisher (1981) and Stevenson (1991).

another farmer's well, one would not need an institution for groundwater management. Such a resource would, in the language of resource economics, be considered a *privatizable* good: individual ownership and management of the resource would not be expected to create any social problems.

Second, one must determine the location and extent of the "community" that experiences any kind of externality. If the community is well-defined or definable, the resource or biophysical process is said to have the attribute of *excludability*. E.g., in the case of confined groundwater aquifers, the community is fairly well-defined, being the set of groundwater users living above or around that particular groundwater aquifer. When the affected community cannot be clearly demarcated, the resource or environmental activity is described as a *public* good (or bad).

Third, one must determine whether the externalities are *symmetrical*, i.e, whether similar actions by different users lead to similar impacts on all others in the community. We find that groundwater withdrawal by one well-owner may have approximately symmetrical externalities on all other wells tapping into that aquifer. Groundwater therefore qualifies to be called a *common-pool* resource[3]. But withdrawals from a river have asymmetrical impacts: upstream withdrawals affect downstream users but not vice-versa; river water management is therefore a problem of asymmetrical externalities. It should be noted that these characteristics are neither strictly binary (excludable or non-excludable, etc.) nor are they purely "naturally" determined; they may vary in degree and can be changed through creation of social norms.[4]

3.2 Application to forestry

I used the example of water above because water is a relatively simple resource. Forests, although loosely referred to as common-pool resources in the environmental literature, are actually a more complicated case. This is because forests provide multiple products and services, which vary in the extent of their divisibility, size of affected community, and symmetry of externalities created by forest use. Forests produce fuelwood, timber, leaf manure, grass, and minor forest products. They also provide soil conservation and hydrological services. They sequester carbon and are repositories of biodiversity.

Now, one could argue that certain forest products, such as fuelwood and timber, are essentially privatizable resources, because the resource is divisible: once individual forest patches are demarcated and assigned to individual users, fuelwood harvest by one user

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[3] I follow Stevenson (1991) in defining Common Pool Resources as those where indivisibilities are fundamental to the biophysical nature of the resource (such as a groundwater aquifer which cannot be partitioned amongst different farmers). In contrast, a Common Property Resource is a resource of which the property rights have been assigned to a community as a whole (such as a city park or a grazing land). Thus, a common pool resource may not be a common property resource if property rights to it are not assigned clearly to a community (as in the case of groundwater, where rights currently accrue to individuals owning land above the aquifer. Similarly, a common property resource may not really be a common pool resource: tank beds are often owned by the village community jointly, although it is physically possible to assign permanent individual ownership rights to different parts of the tank bed.

[4] If persons living beyond a certain distance from a lake are socially prevented from fishing in the lake, the problem of excludability can be said to be diminished considerably. If, however, there is no such control, defining the affected community will be very difficult.

has no impact on fuelwood availability of other users.[5] The case of grass may be somewhat more difficult: for grazing effects to be divisible will require that each individual plot have a fence to keep out others' cattle--an investment that may be beyond the capacity of individual users. Similarly, while fuelwood harvesting can be considered divisible, protection from fire may not be: once a fire starts, it could spread to all plots and hence fire prevention and fire fighting must be done by all the users "jointly". Wild animal populations, being generally more mobile, would be even less divisible, or at least divisible only at large scales (say between village clusters but not between individuals); wildlife conservation measures must therefore be adopted simultaneously by all villages within the range of that animal for them to be effective.

However, to the extent that some boundary *can* be drawn in each case, and as long as one ignores other impacts of the use of these resources (see below), all these resources--grass, wood, or wild animals--can be considered to have excludability. And to the extent that the indivisibilities in these resources are due to biophysical processes that have no particular spatial directionality, the externalities--if any--created by the harvest of these resources by individuals can be said to be symmetrical (person A hunting recklessly affects person B as much as reckless hunting by person B would affect A). These resources are therefore amenable to (and when strong indivisibilities exist, require) *communal* management, with the appropriate "community" varying from perhaps neighbouring households to entire village clusters or even larger depending scales upon the resource and the biophysical processes involved.

On the other hand, services such as soil conservation and hydrological control have strong asymmetry: upstream forest conservation benefits downstream farmers, but not vice-versa. And the affected community may be well beyond typical definitions of "local" communities. The most extreme case is the carbon sequestration benefit of tree growth: individuals grow trees but the benefit accrues to the globe as a whole! These aspects of forests provide the justification for granting a say to "non-local" communities in local forest management.

Traditionally, the state has arrogated to itself the role of representative of all non-local communities for all these extra-regional or pubic good aspects of forests. The state determines what rights the non-local communities have and places corresponding restrictions on local forest users, and in most cases itself manages the forest to provide or enhance the non-local benefits. The non-local communities are never explicitly consulted, nor are they involved in any kind of negotiation with upstream forest users. But this need not necessarily be so. For instance, it is well known that in traditional canal irrigation systems, downstream farmers negotiate with upstream ones and arrive at some understanding sharing of water and of canal maintenance costs without the intervention of the state. Similar negotiations could be allowed between upstream forest users and downstream farmers. The role of the state would then be to act as a court of appeal against breach of contracts, once they are reached.

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[5] Strictly speaking, one may argue that although the growth of one tree is largely independent of the growth of another tree--hence creating divisibility--the same cannot be said for regeneration: pollination and seed formation will typically involve more than one tree and pollinating agents such as bees that cut across most socially drawn boundaries. However, another way of putting the privatizable argument would be that forest trees are as privatizable as agricultural crops.

Note also that, following this logic, the "jointness" in management in the case of asymmetrical externalities should be much lesser than that in the case of symmetrical ones. In the former case, the role of the non-local beneficiaries (or their representatives) really ought to be limited to arriving at a contract and then monitoring its implementation by the local users in return for whatever benefits promised. Having set mutually acceptabl goals, the day-to-day management can be left to the local community.

3.3 Social arguments for jointness in management

There are also social arguments for jointly managing resources. Even when a resource is fully divisible and privatizable, there is a role for the state or some people's institution, viz., actual dividing the resource and ensuring that the division is *fair*. And this can be a recurring process, as the rights-holders (individuals, families or communities) grow, die, divide, or migrate, or as technological change creates new divisibilities or externalities.

Again, when we say that externalities exist and are symmetrical, we are implicitly assuming an even distribution of rights to that particular resource (e.g., groundwater rights to all farmers holding land above the aquifer). But this distribution does not arise in a vacuum; it is societally determined, modified[6], and enforced. Note that the "community" may not always be in a position to enforce a fair distribution (or to come to an agreement over what constitutes fairness), because the community may be (as typical rural Indian communities are) highly differentiated in socioeconomic terms.

Even if rights are fairly distributed, communal management requires the ability to impose sanctions on internal violators, and also prevent external poaching. While the former may be possible without recourse to outside agencies in certain close-knit communities, in others internal inequities may prevent equal imposition unless the institution is bolstered from outside. And the protection of the resource from outside poachers (in effect, the practical enforcement of the community's property rights) will often require external support. Similarly, supra-communal bodies may be required for inter-community dispute resolution.

Finally, in a situation of asymmetrical externalities, the state will have to play a key role, because the "upstream" users may often have no incentive to reach any agreement with the "downstream" beneficiaries. Socially speaking then, the state's role cannot be limited simply to enforcing contracts or resolving conflicts, it must set basic standards for *fairness* that must be met by any contract. In other words, the state must assign property rights, while translating these rights into outcomes can be achieved through alternative means: regulation, negotiation, markets, fiscal transfers, etc.

One other situation in which the state has role to play is where management requires sophisticated knowledge (silvicultural, hydrological, etc.) that cannot be economically generated by a single community. In this case, the state would have to invest in generating knowledge for the public good. But it is not clear to what extent this is actually the case in forestry, because one finds that much of state-funded forest research is irrelevant to the needs of local communities.

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[6] E.g., the community may decide that the groundwater rights extend equally to all residents in the vicinity of the aquifer regardless of their landholding and the location of their land.

3.4 Deconstructing the notion of "state"

Although I have used the term "state" in the above discussion, I do not necessarily mean the state "as it stands today". Any perfunctory examination of the structures of the Indian state will indicate glaring contradictions with the principles of participatory democracy, accountability, and transparency, with very little theoretical or empirical justification for the degree of centralization of the legislative, executive and police powers that we see today in all sectors. Even the recent amendments to the Constitution and the subsequent setting up of 3-tiered Panchayati Raj institutions (PRIs) have resulted in only marginal corrections to this imbalance. Indeed, the forest sector (which has been almost entirely excluded from the schedule of the ambit of the PRIs) provides an extreme case of centralization: Forest Officers not only have very substantial discretionary powers for which they are answerable only at the state-level, but they also have been given police powers! In fact, however, there is no basis to the assumption that the national or state governments are the best or only levels of the state that can represent the "larger public" or "non-local" interests in forest management, or that only they can fulfill the role of ensuring local equity, enforcing property rights, resolving conflicts, or solving other market failures (like those of credit and scientific information).

To summarize this theoretical discussion, one must keep in mind that a) the indivisibilities and externalities of forest management span various scales from the individual to the global, b) the scales for "joint" decision-making should therefore also range from the individual to communities to river watersheds to the globe, c) socially too there may be certain arguments in favour of joint decisions at the village community and larger scales, but d) as far as possible, the jointness must be allowed to evolve naturally (the state should not arrogate to itself the role of representative of some fuzzy "public interest"), rather e) the role of the state should be restricted to (re-)assigning rights in the form of minimum entitlements and rules of process, enforcing them, conflict resolution, and solving problems of information, f) this "state" must not be confused executive agencies like the forest department, nor should it be thought of only as the central and state governments; village, taluka or district-scale entities must be treated as full-fledged forms of the state, with certain exclusive policy-making, financial, judicial and police powers.

4. How joint management?

Although there may be strong theoretical reasons in favour of some form of joint management, there may also be practical constraints to bringing about such an arrangement. I briefly discuss the main ones that have not only stymied current JFM programmes in many regions but will also have to be confronted if the more radical form of "joint" management proposed above is to be implemented.

4.1 Elusive and complex nature of "community"

Those arguing in favour of increased decentralization of natural resource management in general (Agarwal and Narain, 1989; Ravindranath and Gadgil, 1990; Rao and Gadgil, 1995) and forestry in particular (Poffenberger and McGean, 1996) have implicitly or explicitly assumed the existence of well-knit communities at the scale of a hamlet or revenue village. While not denying the existence of such communities in the past, I wish to point out the following.

(a) Geographical factors: In certain forested regions, including most of the Western Ghat, the physical geography and settlement patterns are such that the notion of a "village community" is much weaker than in villages of the plains. Mencher (1994) has shown this very effectively for Kerala, and we have noticed the same pattern in the entire Karnataka Western Ghats. Resource management is much more individualistic or clan-based at the most. This individualistic approach to management is reflected in the pre-ponderance of individually oriented forest tenure regimes (such as *soppinabettas*, *kumkis* and *baanés*) recognized during the British forest settlement in the hilly region of the Western Ghats districts (Lélé and Srinidhi, 1998). The transaction costs involved in getting these individualistic villagers to manage the forest communally would be high and (as discussed above) possibly unnecessary.

(b) Social differentiation: Just because a community is well-knit, i.e., there are many interdependencies amongst the members, does not imply that the community *as is* should take over forest management. Typical Indian village communities are highly differentiated economically and divided socially. While this does not mean that they are "unfit" for taking collective decisions, it certainly requires designing the institution in a manner that will ensure *fairness* in the face of these ground realities. To date, the strategies for this in most JFM programmes are in the form of "reservation" of seats for different communities/groups in the managing committees. These strategies will, however, be inadequate to correct many of the imbalances of power.

Given the above, it may be more efficient to assign certain basic minimum entitlements and responsibilities to *individual households*, and restrict the role of the village (or higher level) collective institution to monitoring of these entitlements and responsibilities. There is significant evidence of the success of such institutional models from China (Huang *et al.*, 1997), and there is also evidence from the Western Ghats that these institutions can, under certain conditions, result in sustainable forest management outcomes (Lélé, 1993; Lélé *et al.*, 1998)[7].

(c) Globalizing economies and fragmenting communities
Over the past hundred years or so, rural economies even in recently industrializing countries like India have undergone very dramatic changes. In particular, villagers are much more integrated into the exchange economy, engaged in producing for larger product markets, and participating in larger and sectorally specialized labour markets. As a consequence, the sense of "community" has declined dramatically.

Although one tends to believe that these changes are "exogenous" or "inevitable" outcomes of technological change, they are in fact the outcome of a co-evolution between technology, economic institutions, culture and politics. Deflecting these de-localizing trends will therefore require changes in the structure of economic and political institutions, something that beyond the scope of current JFM programmes, and something that cannot be achieved even by apparently comprehensive and sweeping reforms in the institutional arrangements for natural resource management as those suggested by Rao and

[7] This is not to imply that current individualized arrangements are *the* most appropriate: as mentioned above, they have serious drawbacks from the point of view of social equity and hence result in unsustainable practices by the currently excluded populations.

Gadgil (1995, cf. Lélé, 1996).

4.2 Problem of incentives

Furthermore, while ecologically speaking certain aspects of forest use may have indivisibilities, this does not in itself imply a symmetry in forest dependence of, and hence in incentives faced by, individual households. Indeed, the common assumptions of a general forest-dependence of all villagers, of dependence for similar resources, or (even when variations are acknowledged) of a greater dependence of the poor (Jodha, 1990), which implies that any improvement in forest condition will favour help the poor, need to be carefully examined.

(a) Divergence in forest dependence:

Research in the Western Ghats has indicated that socioeconomic variables (such as agricultural landholding, livestock holding, control over tree and grass resources, social status and access to non-agricultural incomes) directly influence the type and extent of forest products consumed or demanded, the opportunity costs associated with participation in forest management, and the capacity to invest household labour and resources in forest protection or in technologies that reduce forest dependence (Nadkarni *et al.*, 1989; Lélé, 1993; Lélé, 1994; Lélé *et al.*, 1998). Not surprisingly therefore, it is has been found that the benefits from forests may go disproportionately to those households which have more of each (assets and access to labour), i.e., the better-off households.

If these differences are to be corrected, the reallocation of rights that has take place under JFM must be not just a shift away from state control towards community control, but also away from inequitable individual assignments to more equitable assignments, and indeed attempt to compensate for existing inequities in access to agricultural land.

(b) Declining dependence and competition with agriculture:

Finally, there appears to be a secular declining trend in the dependence of all households with the forest is changing with the changes occurring in the economy, particularly in agricultural, animal husbandry, housing and medical technologies, and increased monetization of all activities, including the availability of non-land-based jobs. For example, the introduction of gobar gas has almost eliminated dependence on fuelwood for better-off households in the Western Ghats, without increasing their dependence on forests for fodder proportionately--fodder requirements are often met from agricultural waste or imported from outside the region. Landowners in Chickmagalur and Kodagu districts have, over the past hundred years, shifted into coffee cultivation on a very large scale[8]. Since modern coffee cultivation does not require cowdung manure nor major quantities of leaf mulch, and since the pruning of shade trees on coffee lands yields substantial fuelwood, the coffee-cultivating households are no longer directly dependent upon biomass from forests outside their coffee lands (as they were when cultivating paddy or areca).

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[8] Land area under coffee cultivation is estimated to have expanded by 276% in Coorg district and by 85% in Chickmagalur district during the 110 year period between ~1880 and 1990 (various archival sources of Government of Karnataka).

Of course, much of this expansion of coffee cultivation itself has come at the expense of erstwhile forests. But this only further highlights the schizophrenic nature of the human-forest relationship in high forest areas where communities have made a transition to settled agriculture: while forests meet important subsistence and even some cash needs, forestry as a landuse competes with agriculture, especially for households that do not currently own cultivable land. They routinely "encroach" (or wish to encroach) upon the (often arbitrarily drawn) boundary between forests and agriculture. Indeed, legal/illegal conversion to agriculture is one of the biggest contributors deforestation in India (Bawa and Dayanandan, 1997). Not surprisingly, JFM programmes are already encountering conflicts over the issue of encroachments (Khare, 1996; Mitra and Correa, 1997), with some activists seeing JFM as a means to evict poor or marginal farmers and wanting instead to focus on regularization of encroachments (e.g., the stance taken by DISHA in Gujarat: Dhiraj Bhalani, VIKSAT, pers.comm.).

The strategy used in JFM to tackle the problem of insufficient incentives is to concede the right to local communities to harvest products not just for subsistence but also for income. The highly constrained manner in which these income rights have been implemented in practice--largely because of vested interests including the Forest Departments--is not the subject of discussion here. Suffice to say that the state has not actually yielded harvesting rights to the socalled "nationalized" minor forest products (Saxena *et al.*, 1997; Saxena, 1997). In addition, however, I would argue that there is a need for a change at the conceptual level in the notion of property rights. As Bromley (1989) and others have argued, property is really a right to a benefit stream, which means that unless this benefit stream can actually be realized--in this case through fair prices in the market--one cannot say that property rights have really been transferred. This requires *inter alia* the removal of state *monopoly* marketing schemes and providing credit and price information to the local rights-holders.

4.3 Forest rights in the pre-JFM world

The British rulers took a philosophical position that all forests were state property and actually embarked upon a "forest settlement" to establish this in practice to serve imperial interests. Nevertheless, for a variety of reasons, the final picture of forest property rights is considerably more complex than the simple dichotomy of exclusive state control and open-access.

Consider the example of the Western Ghats region of Karnataka, which have been described in detail in (Lélé and Srinidhi, 1998). In this region, while state-controlled or open-access situations form a predominant part of the landscape of the state as a whole, there is a large variety of a forest tenure regimes that, as mentioned above, are essentially *individual* or group assignments constituting a significant portion of forested lands in all the Western Ghats districts.[9] These tenures provide exclusive usufruct rights in specific

[9] We have distinguished 12 forms of individualised tenure and 5 forms of communal tenure. In Kodagu district (the erstwhile princely state of Coorg), by the end of the 1890s 160,495 ha of land were designated as *baané* lands wherein the title to the land and often to the timber too was conceded to individual agriculturists. This works out to more than 60% of the total uncultivated (mostly forested) land at that time. In other districts, although the overall fraction of forest area in which such rights were conceded may look smaller (e.g., 6% in Shimoga, 8% in Chickmagalur and 7% in Uttara Kannada districts), the fraction is much higher if one looked at only the forest areas in the vicinity of human settlement (the only areas relevant to JFM). For instance, in Sirsi taluka of Uttara Kannada

forested patches to certain individuals or groups of individuals to virtually all forest produce except timber and sandalwood (the regulations regarding timber vary from tenure to tenure). However, as they are tied to the ownership of specific agricultural lands, the arrangements are always *inequitable*, albeit to varying degrees[10].

To the extent that these tenures are being "sustainably" managed today, they constitute examples of alternative forms of "joint" management--contracts between the state and the individual--that could also achieve the environmental objectives of forest policy. But they also indicate how equity objectives have not only been sidelined but actually confounded by forest policy. On the other hand, seemingly pro-people concessions such as *nistaar* rights in Madhya Pradesh or Canara Privileges in Uttara Kannada pose road-blocks to de-centralised management of forests, as they entitle residents of villages and towns far away from the forests to forest produce without contributing towards forest protection or regeneration (Sarin, 1996, p.176).

These historical tenure regimes will constitute serious barriers to any attempts to revamp the distribution of forest rights and responsibilities between the state and the community. Worse, in the absence of a clear recognition of this on-the-ground complexity of forest access rights, the JFM programmes as they stand today may even become vehicles for further enhancing local inequities without making a serious dent in the sustainability problem: in Uttara Kannada district of Karnataka, households already enjoying *soppinabetta* privileges in 20-40 acres of forest per household are using JFM to shift their fuelwood pressure to JFM lands and have begun growing timber trees on their soppinabetta lands (Mitra and Correa, 1997).

Eventually, the JFM orders will have to be substantially modified to bring all these lands under its ambit in some manner. But this cannot be done through executive orders, it will require *legislative changes*, because most of the existing rights and privileges are mentioned in the state Forest Acts and Rules. This implies that the existing state forest acts, rules and manuals will have to be completely revamped.

5. Summary and concluding remarks

I have outlined above the limitations in the conceptual model of JFM (as distinct from lacunae in its practical implementation on the ground and the political economy of this implementation). I have indicated that the limitations arise from incomplete understanding of the theory of institutions for environmental management as well as the empirical nature of the people-forest relationship in parts of rural India. This discussion is not meant to suggest that the successes that have been observed so far in JFM--be they in West Bengal, Orissa, Gujarat or elsewhere--are spurious. Nor is it an attempt to romanticize community

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district, *soppinabetta* privilege lands account for 22% of public land when villages in the upper 3 quartiles of population density are considered.

[10] In Uttara Kannada district, only owners of arecanut orchards were given usufruct rights to large patches of forest (in the ratio of 8 acres of forest for every acre of orchard), while in parts of Shimoga and Chickmagalur districts, all landowners have such privileged lands but the ratio is higher for arecanut orchard owners than for paddy cultivators. The assignments are even more generous but much more random in Kodagu district. Nadkarni *et al.* (1989) have described in detail the inequitous economic implications of such assignments.

forestry, which indeed constitutes a significant fraction of the cases in the abovementioned three states. Rather, it is an attempt to imagine the extrapolation of JFM or community forestry to the rest of the country, to anticipate the problems that might crop up and to attempt to understand the conceptual limitations of the current notion of JFM that might lead to such problems. I conclude by pooling the individual suggestions made above into some kind of a whole, with the disclaimer that it is not meant to be the final answer but meant to provoke a debate.

The broad principles for organizing overall forest management (joint or otherwise) that emerge from the above discussion may be summarized as follows:
1) There should be a three-tier structure of forest rights: individually assigned usufruct forests, village community forests, and district forests, with the district-level state being the "record keeper" of all land rights. The rights of the individual should progressively attenuate along this gradient, as also the level and kind of landcover and vegetative manipulation permitted. None of these patches should permit alienation of the land.
2) The individual assignments should be as equitable as possible. Where iniquitous individual assignments already exist, the imbalance should be redressed through a combination of scaling back the extent of the assignments, taxing the excess assignments, or compensating the others through increased income rights in community forests.
3) The allocative role[11] of community-level (or higher level) organs of governance should not be confused with the productive role of cooperation. Thus, the village forest committees as they exist today should typically be split up, with their allocative and policing roles being taken up by village panchayats and the productive role--which involves day-to-day decisions about resource management--being left to individuals or *self-selected* collectives of where individuals pool their labour, their productive assets (assigned forest patches, community forest and other capital), and/or forest produce for marketing as they deem fit. Individuals should nevertheless have the right to market the produce from their individual patches without the help of these cooperatives. But all land-related commercial activity (forest-related or agriculture-related, cooperative or individual) must pay some taxes to the village panchayat.
4) The district-level state body must provide, in addition to conflict resolution and rights enforcement, credit facilities, marketing information, and technical support. It must directly control the police, the forest technicians (currently what is the forest department), and other executive arms of the state. It should directly manage district forests only where local communities declare their inability to do so.
5) Higher levels of the state must not directly interfere in forest management, they must simply act as federations of the district-level bodies with powers to legislate about and enforce basic minimum environmental and social rights, e.g., the rights of downstream watersheds.

It must also be borne in mind that JFM or any of its alternative forms are not simply means to "efficiently" achieving simple-minded objectives of "greening India" or "reforesting degraded forest (department) lands" or "reaching and maintaining 33% forest cover" or "successfully protecting existing natural parks". The restructuring of forest

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[11] Allocation here is not meant in the sense of day-to-day distribution of benefits or profits but rather the act of assigning initial property rights, determining who is to be included and who is to be excluded from certain resources, and in general determining what distribution of costs and benefits is fair or unfair.

management institutions also requires a socially broad-based debate and redefinition of societal goals and environmental boundary conditions required to achieve them, including the role of forests. This in turn will require the dissemination and broad social acceptance of information on the magnitudes *and* distribution of the benefits and costs--including the various externalities mentioned above--of all the different ways of managing forested (and erstwhile forested) lands--as forests or otherwise. Local communities, their individual constituents and their neighbours will have to arrive at consensual criteria for deciding which part of a village's land area can be brought under which kind of land use--ranging from full protection through limited "disturbance" to various combinations of forestry and non-forestry activities. The concept of "joint" forest management must thus be rooted in an understanding of the environmental and social reasons for and constraints in "jointness" in its different forms for it to be applicable to the larger Indian landscape.

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BROAD CATEGORY --->	LARGELY STATE CONTROLLED				LARGELY OPEN ACCESS			
ELEMENTS OF RIGHTS REGIME	National Parks	Sanctuaries	Reserve Forest (RF)	Amrut Mahal Kaval	Protected Forest (PF)/ District Forest/ Minor Forest	Minor Forest- of Uttara Kannada	Paisari	Gomals / Hullugavalu / Danagalige Muhpattu
Location	ALL Western Ghats Dist.	ALL Western Ghats Dist.	ALL Western Ghats Dist.	SMG, CMG, Hassan, Mysore	All Western Ghats Dist. exept UK	UK	Kodagu	Gom. in all WG Dist.s,Hu.in Kodagu, DM in SMG/CMG
Controlling Dept.	FD	FD	FD	FD+Animal Husband. Dept	FD (earlier RD)	FD	Rev.Dept.	Rev.Dept.
Type of Access	State-controlled	State-controlled	State-controlled	State-controlled	Open	Open	Open	Open
Products Harvestable for Self Consumption	None	Dead twigs & Fodder by locals	Dead twigs& Fodder by locals	Fodder by locals if excess	Fuel wood & Fodder	Fuel wood & Fodder	Fuel wood & Fodder	Fuel wood & Fodder
Products Harvestable for Sale	None	MFP by FD	MFP and Timber by FD	None	MFP and Timber by FD	MFP and Timber by FD	MFP and Timber by FD	MFP and Timber by FD
Right to Cultivate	No	No	No	No	No	No	No	No
Other Rights								
Alienability of Land to which rights assigned	NA	NA	NA	NA	NA	NA	NA	NA
Right to convert to Patta (pvt. holding)	No	No	No	No	No	No	Yes	No
Responsibilties of Assignee	Ecosystem conservation	Ecosystem conservation	Production and Conservation; local people must help put out fires, report offences	Cattle Breeding service				

BROAD CATEGORY --->		APPROX. PRIVATE ACCESS						
ELEMENTS OF RIGHTS REGIME	Kane and Bane	Kumki	Sagu Bane	Jamma Bane	Hittala-mane-dala	Jammamalai	Genimalai	Haadis/ Private Forests
Allotment Criterion and Quantity	1 ac kane and 2 ac bane per ac of kadeem land	300ft-wide strip in Govt.Waste land assigned to the owner of adjoining Kadeem, Mulgeni or Walawarg lands in the year Fasli 1260 (AD1865)	Assigned to Sagu holders in ratio 2ac to 300ac per acre of sagu (pvt.wetland)	Assigned to Jamma holders in ratio 2ac to 300ac per acre of jamma	Portion of bane land allotted for dwelling places and farm yards	Rights assigned in RF for cardamom cultivation on long-term lease	Rights assigned in evergreen forests for Cardamom cultivation on long-term lease	Private dry land where forest tree species are maintained
Assessment Payable	Rs.0.50 per ac of Kan, nil for bane	No	Coffee rates if area cultivated >10ac	Coffee rates if area cultivated >10ac	Sagu rates, if area cultivated >1 ac.	Yes	Yes	Yes
De facto situation	Mostly converted in to Rubber Plantation.	Many kumkis converted to hort. crops; land sales also reported; HC judgement suggests kumki = *patta*	Most of the banes have been converted in to coffee plantation	Most of the banes have been converted in to coffee plantation; clandestine sale is common				Many haadis still have dense natural tree growth, but others have been converted to cashew plantations
Total Extent in sq.km.	**NA**	**666**	**894****	**711***	**NA**	**32**	**NA**	**>400**
Remarks			* Sale of timber permited only in Redeemed Sagu Bane. **includes coffee under bane also	*Includes jahgir, umbli, jodi, para dheena,uttara bane area also. coffee in bane also included	Same privileges as in bane.			
Legal Basis	KLRA	KLRA,MdFA, MBRSO	CLRR,KLRA	CLRR, KLRA	CLRR	Settlement	Settlement	Settlement

MFA=Mysore Forest Act 1900; MdFA=Madras Forest Act 1882; MBRSO=Madras Board of Revenue Standing Orders; WLA = Indian Wildlife Act 1972;

BROAD CATEGORY --->	LARGELY STATE CONTROLLED				LARGELY OPEN ACCESS			
ELEMENTS OF RIGHTS REGIME	National Parks	Sanctuaries	Reserve Forest (RF)	Amrut Mahal Kaval	Protected Forest (PF)/ District Forest/ Minor Forest	Minor Forest- of Uttara Kannada	Paisari	Gomals / Hullugavalu / Danagalige Muhpattu
Allotment Criterion and Quantity	Any land considered essential for wildlife conservation	Any land considered essential for wildlife conservation	Land with dense natural tree growth, or historically declared as RF		Assignment criteria not clear	Historically assigned at approx. 2 acres for every head of cattle in the village	Waste lands belonging to Govt.	Assigned to all villages at approx. 30 acres per 100 cattle in the village
Assessment Payable	NA	NA	NA		NA	NA	No	No
De facto situation	May contain tribal and even non-tribal settlements within its boundaries	May contain tribal and even non-tribal settlements within its boundaries	May be open-access in certain areas, also subject to encroachment for cultivation		Rights may be curtailed where plantations are taken up; FD may fell timber; fuelwood being harvested for sale by headloaders	Rights may be curtailed where plantations are taken up; FD may fell timber; Govt has allotted house sites; fuelwood headloaded to towns	Historically, Govt. has auctioned or granted parcels for cultivation; fuelwood headloading to town is common	Most often used for Soc.forestry plantations; large area in SMG has been leased out to Mysore Paper Mills for plantations
Total Extent in sq.km.	**2,472**	**3,888**	**20,250**	**NA**	**3,932**	**2,000**	**1,364**	**4,806**
Remarks		MFP harvesting contracts are granted at the discretion of the Chief Wildlife Warden	For each RF patch, specific privileges are assigned to neighbouring villages.			MFs in UK district are reported under Reserve Forests	Earlier called Govt. Paisari	Most of the gomal lands in WGhats village are thickly wooded.
Legal Basis	WLA 1972	WLA 1972	KFA, KFR, MFA	KFR	KFA,KFR,MFA	MFSettlement	CLRR	MLRA, G.O. of 1893

Notes: FD=Forest department, RD=Revenue department, SMG=Shimoga district, CMG=Chickmagalur district, UK=Uttara Kannada, NA=not available, MFP=Minor forest produce

BROAD CATEGORY --->	APPROXIMATELY COMMUNAL ACCESS					APPROX. PRIVATE ACCESS			
ELEMENTS OF RIGHTS REGIME	Devarakadu	Uruduve	Panchayathi Mandu / Ambalas/ Uruambale	Devara Mandu / Urumandu	Uruguppe / Gramthana	Soppina betta UK	Soppina betta CMG &SMG	Khathe Kans	Gerekadu/ Kuruvas/ Strip Grants
Allotment Criterion and Quantity	Assigned to village deity / Temple; area is determined by custom	Assigned when there are no bane lands in the village; no specific proportion	Historical	Historical	Historical	Assigned to specific parcels of "garden" land in ratio 4ac(downghat)/ 9ac(upghat) per acre of garden	Assigned to entire village , no specific proportion	Assignment in evergreen forest at discretion of govt.	Strip (16-30 ft wide in Kodagu,) along edge of wet land to protect from ingression of animals: assigned occasionally
Assessment Payable	No	No	No	No	No	Included in Areca assessment	No	Yes	No
De facto situation	Declared as Reserved Forest after 1985					Valuable MFPs are being sold; timber felling by FD has been resisted by betta holders; RD permitting house construction	Farmers have divided the soppinabetta among themselves; certain remote patches may remain common access	Though this land tenure was repealed, some farmers are still paying assessment.	Location of these grants is unclear
Total Extent in sq.km.	31	26	1	1	2,325	543	251	NA	NA
Remarks	Transfered to RD in 1904, returned to FD in 1985		Sometimes included in Paisari	Sometimes included in Paisari			Area estimate does not include area in Tirthahalli taluk		
Legal Basis	KFR	KFR	Settlement	Settlement	Settlement	CP	KLRA	Settlement	Settlement

CLRR=Coorg Land & Revenue Regulation, 1899; CP=Canara Privileges; KFA=Karnataka Forest Act 1963; KFR=Karnataka Forest Rules, 1969; KLRA=Karnataka Land Revenue Act 1964

BROAD CATEGORY --->	APPROXIMATELY COMMUNAL ACCESS					APPROX. PRIVATE ACCESS			
ELEMENTS OF RIGHTS REGIME	Devarakadu	Uruduve	Panchayathi Mandu / Ambalas/ Uruambale	Devara Mandu / Urumandu	Uruguppe / Gramthana	Soppina betta UK	Soppina betta CMG &SMG	Khathe Kans	Gerekadu/ Kuruvas/ Strip Grants
Location	Kodagu	North eastern parts of Kodagu	Kodagu	Kodagu	Uru.--Kodagu / Gr.--UK,SMG & CMG	Utttara Kannnada Dist.	Malnad areas of Shimoga and Chikmagalur	Shimoga, Chikmagalur & DK	G./K.--Kodagu; SG--U.K.district
Controlling Dept.	FD	RD	RD	RD	RD	FD+RD	RD	RD+FD	RD
Type of Access	Community/ State-controlled	Community-controlled	Community-controlled	Community-controlled	Open	Individually-controlled	Individually/ Communally-controlled	Individually-controlled	Individually-controlled
Products Harvestable for Self Consumption	Fuel wood , Fodder, MFP & Timber	Fuel wood , Fodder, MFP & Timber	Fuel wood & Fodder	Fuel wood & Fodder	Fuel wood & Fodder	Fuel wood , Fodder, MFP & Timber	Fuel wood , Fodder, MFP & Timber	Fuel wood , Fodder, MFP & Timber	Fuel wood , Fodder, MFP & Timber
Products Harvestable for Sale									
Right to Cultivate	No	No	No	No	No	Pepper in understorey	Pepper in understorey	Pepper & Cardamom in understorey; plus other up to 0.5ac	Horticultural/ dry crops
Other Rights			Conducting village assembly /meeting	Conducting festival for goddess Bhagavati / Huttari festival.	Construction of houses of villagers	soil removal, cattleshed & drying yard construction, well-digging; pepper cultivation	cattleshed and drying yard construction, well-digging		
Alienability of Land to which rights assigned	NA	NA	NA	NA	No	Goes with corr. agri.land	Goes with corr. agri.land	No	Goes with corr. agri.land
Right to convert to Patta (pvt. holding)	No	No	No	No	No	No	No	No	No
Responsibilties of Assignee						Maintain min. tree density of 100/ha (of size > 30cm gbh), including all reserved trees		Maintain reserved trees	Maintain reserved trees

BROAD CATEGORY --->		APPROX. PRIVATE ACCESS						
ELEMENTS OF RIGHTS REGIME	Kane and Bane	Kumki	Sagu Bane	Jamma Bane	Hittala-mane-dala	Jammamalai	Genimalai	Haadis/ Private Forests
Location	Sulya Taluk of DK	Dakshina Kannada	Kodagu	Kodagu	Kodagu	Kodagu	Kodagu	D.Kannada; southern part of coastal U.K.
Controlling Dept.	FD+RD	RD	RD	RD	RD	FD	FD	RD
Type of Access	Individually-controlled	Individually-controlled	Individually-controlled	Individually-controlled	Individually-controlled	Individually-controlled	Individually-controlled	Individually-controlled
Products Harvestable for Self Consumption	Fuel wood , Fodder, MFP & Timber	Fuel wood , Fodder, MFP & Timber	Fuel wood , Fodder, MFP & Timber	Fuel wood , Fodder, MFP & Timber	Fuel wood , Fodder, MFP & Timber	Fuel wood , Fodder, MFP & Timber	Fuel wood , Fodder, MFP & Timber	All products
Products Harvestable for Sale		Sale of *H.wightiana* for fuelwood	Fuel wood , Fodder, MFP & Timber *			MFP		Fuel wood , Fodder, MFP & Timber
Right to Cultivate	Pepper & cardamom only in Kane	Horticultural/ dry crops	Horticultural/ dry crops	Horticultural/ dry crops	Horticultural/ dry crops	Cardamom	Cardamom	All
Other Rights								All rights as in *patta* lands
Alienability of Land to which rights assigned	Goes with corr. agri.land	Goes with corr. agri.land	Can be sold separately with	Jamma lands could not be	Goes with corr. agri.land	No	No	Yes
Right to convert to Patta (pvt. holding)	Yes, in Bane	Yes	Yes	Yes	Yes	No	No	NA
Responsibilties of Assignee	Maintain reserved trees	Maintain reserved trees				Maintain reserved trees; help put out fires	Maintain reserved trees; help put out fires	Replant if felled for timber/ fuelwood