Law, property rights, and social exclusion: A capabilities and entitlements approach to legal pluralism

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... the focus on entitlement has the effect of emphasizing legal rights. The law stands between food availability and food entitlement. Starvation deaths can reflect legality with a vengeance.

Amartya Sen

Hence the legal nature of things cannot be regulated according to the law; on the contrary, the law must be regulated according to the legal nature of things. But if the law applies the term theft to an action that is scarcely even a violation of forest regulations, then the law lies, and the poor are sacrificed to a legal lie.

Karl Marx

The paper is based on and uses the influential capabilities and entitlements framework developed by Amartya Sen, to analyse the effects of legal changes in property rights for people's welfare and development in India. Sen's concepts of capabilities and entitlements are applied to study these effects in terms of changing 'rights regimes', and impacts on poor people's functioning arising from changes in livelihood options or a 'capabilities set'. A trend away from pluralistic approaches to law, and towards greater uniformity, it is suggested, contributes to the exclusion and marginalization of the rural poor from the development process. Based on original work as well as secondary literature and case studies primarily in the Indian context, the paper focuses on three areas for analysis, each of which deal with a different kind or type of property and property regime, embedded in complex and dynamic legal frameworks. These include:

1. Land rights among tribal communities: implications of changes in the legal framework, especially a tendency away from pluralistic frameworks, which dilute the protective power of special land laws for tribal communities in the state of Andhra Pradesh are analysed. It is shown that survival and livelihood strategies of the tribal people are threatened, and further marginalization is likely if uniform property and land laws are introduced.

2. Common property resources: through an overview of some recent research in this area from different parts of India, the crucial significance of common property resources for subsistence of the rural poor is brought out. A comparative analysis of traditional norms for regulation and maintenance of such resources, with newly introduced formal, and legal regulations is made, to understand the implications of each for changes in the entitlements and capabilities of communities and households dependent on such resources.

3. IPRs in agriculture: Several studies have cautioned that developments in genetic engineering and biotechnology may pose significant dangers not only to biodiversity but also to protection of intellectual property rights of farmers and peasants in developing countries. New rights regimes based on recognition of patents and internationally supported intellectual property rights (IPR) threaten the survival of farmers in the third world, by reducing their rights and ability to experiment and innovate, and investing such rights solely in corporations. Significant reduction of capabilities in different forms for different groups are seen to result from shifts in IPR regimes in agriculture and the loss of biodiversity.

  Panel on: "Asian resource management in transition: Implications for customary laws"
The attempt in this paper is not to unearth or present new evidence of social marginalization resulting from legal changes towards uniformity. Rather the major attempt is to recast existing findings within the entitlements framework, and to reinterpret and analyse the findings from recent studies in order to understand the implications of these shifts for the poor and the marginalized groups. The attempt therefore is to develop a broad framework for analysing the implications of changes in property rights regimes for social exclusion, using the capabilities and entitlements approach.

I. Entitlements and Capabilities

While Sen's work on capabilities and entitlements are now well accepted in famine analysis, and analysis of food security, few attempts have been made to widen the scope for applying these concepts in the broad areas of development economics, and poverty analysis. Changes in property rights regimes for instance, and shifts in natural resource use due to economic, social, political, and environmental reasons offer ample scope for studying their impacts on peoples' welfare. The opportunities for clarity in understanding dynamic processes are all the more since Sen specifically focuses on legal issues in his presentation of the entitlements approach.

Sen's theory of entitlements based as it is on a set of rights of 'ownership, transfer and rectification' (Sen, 1984: 311), brings in law as an important mediating agency in a very significant way. In this framework, 'endowment vectors' are related to sets of alternative commodity entitlements through what is called an 'entitlement exchange mapping'. The entitlement approach centres on an individual's entitlements to commodity bundles that may also include food. Exchange can be of two types: trade - which involves exchange with others, and production - which involves exchange with nature. Entitlement then depends not only on the endowment vector that an individual starts with, but is also related to exchange relations. These relations in the form of entitlement exchange mapping (or 'E-mapping' as Sen refers to them) depend on the legal, political, economic, and social characteristics of the society in question. Entitlements therefore refer to "the set of all the alternative bundles of commodities that he can acquire in exchange for what he owns" which is the "exchange entitlement' of what he owns" (1999: 3). Sen further states that "production opportunities, trade possibilities, legal rights to the produce, and social conventions" all affect the e-mapping. While endowments can decline (eg. Through land alienation, discussed later in this paper), entitlements can also fail if for instance food entitlement declines because one has produced less food (direct entitlement failure), or one cannot obtain adequate food through trade (trade entitlement failure). Poverty and starvation therefore result from both a "fall in the endowment bundle and unfavourable shifts in exchange mapping". Analysis of legal shifts with reference to natural resources ownership and control precisely enable us to understand how for instance, the decline in access to, and the degradation of common property resources can result in change in ownership bundles, and consequent entitlement failures.

An understanding of entitlements would not be complete without the complementary concept of capabilities. For Sen, a capability is a feature of a person in relation to goods. In that sense it is much more than simply 'endowments'. Capability is the ability to function and "reflects what a person can do" In Sen's words, "capabilities are … directly valuable in a way that the possession of primary goods cannot be, since they evidently are means to some more human ends" (1984:323). A capability set refers to the alternatives sets of functioning that an individual has access to based on endowments but also on political, legal, social, and economic structures, and includes such features as freedom, health and education.

1 In the Rawlsian sense
Sen thus displays explicit awareness of the role of laws and legality both in bestowing and transferring endowments, and in providing an individual with entitlements to meet her / his needs. However Sen is mostly dealing with entitlements in the context of a market economy and in that context it is important to understand, as Yasuda argues, that "what we commonly refer to as 'the law' or 'the legal system' generally is only that portion of the legal structure that is based on what we will come to recognize as the 'market principle'" (Yasuda, 2000: 5). In order to get a better picture of pluralistic legal systems, it is necessary to "widen and expand our understanding of law to include the area in which other types of principles are effective or dominant" (Yasuda, 2000: 5). Thus an important objective and motivation for this paper is to extend Sen's entitlements approach to non-market domains of production and exchange. In fact a major argument of this paper is that by ignoring non-market domains, scholars as well policy makers, and development experts, provide support to dominant legal systems in suppressing traditional or customary rights. In other words support for legal pluralism in whatever form, in the context of natural resource use, necessarily involves giving importance to and paying attention to non-market and non-tradable goods and services.

The concept of social exclusion which has become popular currently and is being used both in the south and the north, in this paper follows closely its elaboration by Sen, who links it to concepts of capabilities and entitlements. Analyzing the concept within a "framework of freedoms and capabilities", he suggests that focusing on social exclusion, "can substantially help in the causal as well as constitutive analyses of poverty and deprivation" (2000:47). He states that the "perspective of social exclusion reinforces … the understanding of poverty as capability deprivation". He also argues that "an analysis of entitlement failure … can be fitted into a reasoning in which the idea of exclusion can be given a useful part" (2000:12), especially in situations where endowments and assets are denied access for individuals and groups of people.

Over the last couple of decades, scholars and activists have brought out the implications of shifts in property regimes (common property resources, IPRs, patents, land alienation etc.) for peoples' livelihoods and well being. However the exact process by which livelihood sources and abilities to cope are compromised by these changes are not well understood. Moreover the implications of legal changes which undermine pluralistic approaches and thereby the entitlements and capabilities of individuals, households and communities have not been adequately worked out. By focusing on the shifts in entitlements and capabilities arising from legal changes, this paper attempts to explain how people's abilities to cope, experiment, innovate, adapt, and manage natural resources as part of survival strategies have been deeply impaired. In the following pages by focusing on key areas of change, the crucial significance of legal pluralism for enhancing the entitlements and capabilities of people is brought out. This is done by describing legal changes and their consequences, and demonstrating how social exclusion and marginalization can be prevented through imaginative and creative legal and political solutions. While the focus is on India, theoretical literature based on work in other parts of the world is also adduced in buttressing certain points.

II. Tribal Land Alienation: Law, rights, and entitlement failures

Struggles for control over land constitutes a key element in the strategies for survival of tribal communities in India. Estimates of total land alienated from tribals in India range between forty and fifty percent. Protective legislation to prevent land alienation and to restore alienated land exist in many states in India. Struggles for land restoration have been particularly intense in the states of Andhra Pradesh and Kerala in recent times. The major struggle currently seems to be to amend existing laws which guarantee security of land tenures to tribal communities, under the influence of non-tribal groups. In fact the struggles have coalesced around demands for autonomy, separate land legislation, and a different
administrative system, all indicative of the need for greater pluralism in dealing with tribal communities in India. This section presents some perspectives on the changing strategies of tribal communities (the Koyas) in the agency areas north of the Godavari river in the state of Andhra Pradesh, towards control over land, its utilization and its produce. The attempt is to relate these changes to the strategies formulated and implemented by non-tribal rich peasant groups and the state to alienate land belonging traditionally to tribal communities using legal and non-legal means.

The enactment of several laws to protect the property rights of tribals has been paralleled by a systematic scuttling of these laws, and by the continual infringement of these laws by powerful sections of the non-tribal population, in collusion with state institutions. This has resulted in tribal communities adopting diverse strategies to retain and regain control over their land. These range from struggles for physically taking possession of land and litigation in courts, to acts of larceny, such as forcible harvesting of crops cultivated by non-tribals on tribal owned land, and ‘hunger’ or ‘famine’ raids on granaries of non-tribal landlords.

The Koyas are thus up in arms once again and have been carrying on a struggle for almost seven years in the Godavari agency areas. With the extension of the British administrative system into tribal territories since the beginning of the nineteenth century - when the zamindari lands in the northern districts of the Madras presidency were ‘permanently’ assessed, the Koyas, along with other tribal communities in the region, have risen again and again in what the British called ‘fituris’- acts of rebellion and revolt both against the colonial power and against their exploitation by non-tribal outsiders - traders and moneylenders (See Guha and Gadgil, 1984). The current conflict between the Koyas and diverse non-tribal groups began around seven years ago, with a sustained movement by the Koyas to regain land that had been alienated from them over the past several decades. (Revenue records show that in West Godavari district tribals have just 13,358 hectares of land while non-tribals own 28,567 hectares of land. In Khammam, non-tribals are stated to own as much as 29,000 hectares of land. Other estimates reveal that non-tribals own as much as 48% and 52% of the land respectively in West Godavari and Khammam (Jaswanth Rao, 1998). In Jeelugumilli mandal, which has been the site of major conflicts, non-tribals are reputed to be controlling as much 71% of the land.) This time they were supported by the CPI (M), as well as some of the CPI (ML) groups which have been working with them for a long time, and also by some NGOs which did a lot of archival research to come up with evidence to prove the ownership of land by the Koyas. The movement intensified around three years ago, when the Andhra Pradesh High Court issued clear guidelines for restoring tribal land. Attempts by Koyas to occupy their lands, in light of this judgement, was foiled by non-tribal landlords and the police. The Koyas then forcibly occupied some lands and began cultivating them, under the leadership of the Girijan Land Struggle Committee in West Godavari district, and the Agency Girijana Sangham in Khammam district. Till date some 10,000 acres of land in control of non-tribals have been snatched by the Koyas, as part of their movement in the last seven years. They also forcibly harvested grains in some of the lands cultivated by non-tribal landlords, and looted the granaries of some rich peasants. This led to a round of clashes involving the Koyas, non-tribal landlords and the police.

Armed with court decrees, land survey records, and mobilizing themselves in a way that was not done earlier, the Koyas are now on the offensive. While usury, forced labour and such issues have been

2 The most famous of these fituris of course, was the well known armed rebellion led by Alluri Sitarama Raju whose popular protests and guerrilla warfare have become an integral part of Andhra nationalist folklore (See Mangamma, 1983, and Murali, 1997).

3 Apart from existing records in the revenue offices, the NGO SAKTI also dug up some survey reports of the 19th century.

4 Incidentally, wherever the tribals have snatched back their land they have gone back to cultivating food crops - paddy and jowar, rather than cash crops like tobacco.
important, it was land that was always the main issue. While there had been considerable land alienation from tribal communities in this particular region, owing to the clear record of land rights, and inaccessible terrain, the Koyas had managed to hold on to their lands for quite a long period - post-independence - compared to some other tribal groups. Initially, soon after independence, there had been an influx of non-tribals (mainly of the Kamma caste) into this region. These peasants came from south coastal Andhra to cultivate tobacco for the ILTD; the soils in this region are reputed to be suitable for tobacco. However this influx did not disturb the tribals much at that time. The reason for the problem coming to the fore in the last two decades i.e. after the naxalite movements began in the state - is not only the better organization and mobilization of the Koyas - but more importantly the economic, technological and ecological changes accompanying the green revolution.

While strong social and political mobilization accompanied by legal action is part of the struggles on both sides, the role of law and the implications of having plural legal systems for tribal and non-tribal areas are now key constituents of the struggle.

A key element of the current struggle is a demand by non-tribal groups to abolish or abrogate the law popularly termed 1 of 70. The vocal and widespread demand for amendment of 1 of 70 represents a stage in the evolution of the history of legislation for protection of tribal lands - wherein all the loopholes have been more or less plugged - and the non-tribal landlords can hold on to their illegal holdings only by increasingly resorting to violence. The first legislation enacted for protecting tribal lands was the Agency Tract Interest and Land Transfer Act of 1917 (or 1 of 1917). The law required the consent of the agent (i.e. the collector) for land transfers and also sought to put a restriction on interest rates. The main loophole lay in a very broad definition of “hill tribes” to whom transfers could be made, which in effect included most non-tribals living in the agency areas.

After independence, The Andhra Pradesh (Scheduled Areas) Land Transfer Regulation of 1959 was promulgated repealing of 1 of 1917. It withdrew the powers of the collector to permit land transfers and prohibited all transfers between a tribal and a non-tribal. Initially the act was made applicable to the northern districts of Andhra and was extended as Regulation 1 of 1963 to the scheduled areas in the Telengana region of the state. An important feature of the act was that it took note of the role of the moneylender in land alienation and stated that no land shall be liable to be attached and sold in execution of a money decree.

The Andhra Pradesh (Scheduled Areas) Land Transfer Regulation of 1970 (1 of 1970) banned all transfers of land including those between tribals in areas identified as being populated predominantly by tribals. Henceforth land transfers could only be made to the state, which would restore to the tribals. 1 of 70 contains a presumptive clause that all land in the scheduled areas originally belonged to the tribal people, i.e. all land in possession of a non-tribal is deemed to be a transfer from a tribal until the contrary is proved (Janardhan Rao, 1993a). This law has been seen as a very powerful and innovative piece of legislation. The legislation itself was enacted in the context of the naxalite revolts in Srikakulam in the late 1960s. While non-tribal people have been enjoying usufruct rights over tribal lands, either by leasing land from the tribals or by forcibly occupying them, they have been prevented from obtaining ownership rights over them, even though they may have debt claims equal to or more than the value of the land. Thus the impetus for the movement to amend 1 of 70 which has widespread support from among those political parties whose political base is among the non-tribals, and who also aim to get a slice of the pie from the real estate prices which are likely to shoot up once the real estate markets are freed up, especially in the urban areas. From the beginning this act has been contested several times in courts as being unconstitutional, with the result that it has now been included in Schedule IX of the constitution making it difficult to challenge.
Another innovative piece of legislation was the Tribal Areas Regulation Act of 1949 enacted by the then Nizam of Hyderabad. The act created a Social Service Department with authority and jurisdiction to prevent land alienation and exploitation of tribals by outsiders. The act removed the jurisdiction of courts over tribal affairs, and barred lawyers from representing in cases involving tribal land. The post-independent state of Andhra Pradesh however repealed the act when Regulation I of 1963 was promulgated in these areas.

Sustained action by non-tribals, especially the landlords in the region, which go against the letter and spirit of these legislation, and their continuing dominance in tribal areas, have therefore led to a crisis of legitimacy with reference to public institutions, the state, as well as legal and constitutional mechanisms. The pattern of land alienation, is part of a process whereby tribals have been “transformed from an independent producer to a tenant or landless agricultural labourer” (Chakravarti, 1983, 150).

A government order in 1979, in contravention of Regulation I of 1970 which prohibits all transfers of land in the scheduled areas except through the state to tribals, allowed non-tribal poor to retain below five acres of wet and ten acres of dry land which had been acquired illegally. While this has also been a source of conflict between tribals and non-tribal poor, communist and naxalite organizations had managed to present a joint front in their struggles against the richer landlords. It is these landlords, most of whom control in excess of 500 acres and sometimes over 1000 acres of land, who are the major targets of attack.

Initially the Koyas had sought legal remedies for land restoration. Unlike in the hills of north coastal Andhra where no proper land records exist, this task was much easier in the plains, especially in those revenue mandals of Khammam and West Godavari which are the focus of the current conflicts. Zamindari areas under the Madras Presidency had been permanently assessed in early nineteenth century. However, most of the hill areas being inaccessible, they were never properly surveyed. Most of these were under Zamindars who appointed muttadars for collection of land revenue from the hill tribes. Revenue was collected from the local villages as a whole, since individual ownership of property was rare among tribal communities. Community ownership of land also meant that there were no records of individual ownership rights. (However this does not mean, as governments have tended to assume, that if property is not individual, it does not belong to anyone. Community ownership has meant that individuals had access to land resources as members of their community; they had usufruct rights even if they did not have ownership rights).

On the contrary in the area under the Nizam in the erstwhile Hyderabad princely state, some form of land surveys were conducted in the early decades of this century. Especially in the 1940s when the anthropologist, Christoph von Furer-Haimendorf was appointed as an advisor on tribal matters to the Nizam, a Social Service Department was set up which did some very good work with tribal communities in the region. The department took within its ambit the duties of various other departments including revenue and policing duties. The region where the current conflicts are observed was mostly part of the Hyderabad state, and therefore better land records exist.

Using available survey records therefore, the Koyas were able to show in the High Court of Andhra Pradesh, ownership of lands in the scheduled areas by their ancestors. However even though they won the legal battle, the non-tribal landlords prevented the revenue department from carrying out a 'record of rights' exercise and granting actual possession of land to the tribals. Even in cases where ownership rights were transferred on paper, actual possession remained with the non-tribals. Again the Koyas went to court

5 For details see von Furer-Haimeddors, 1982.
6 This order was quashed by the high court, but it did not change the ground situation. The damage had already been done.
7 Muttadars were abolished vide Regulation I and II of 1969)
for implementation of the earlier order. By now the revenue department was under a lot of pressure to implement these orders, both from the courts and from the CPI (M) which exercised a lot of influence owing to their status as allies of the ruling party in the state. The non-tribals reacted by first burning down some of the revenue records offices, so that no records could exist for future legal battles, and secondly launched a movement for amendment of Regulation I of 1970. For this purpose they roped in the non-tribal poor stating that they were most affected by the ban on transfer of immovable property from a tribal to a non-tribal or even to another tribal. There was a sharp polarization on this issue, with most political parties including the CPI favouring an amendment to this legislation, while the CPI (M) and the M-L groups opposed any amendment.

This led to another round of rasta rokos and strikes in the region sponsored by organizations which were a front for non-tribal communities. The non-tribals also asked for de-notification of some villages in the scheduled areas. During previous attacks by agents of the state and rich peasants, tribals and dalits had presented a united front. This united front now seemed to be cracking, as pan tribal organizations began to attack radical communists for forging a false unity of the oppressed classes. Issues of tribal identity came to the fore; demands arose for separate autonomous tribal councils on the lines of the ones in the north-east. This issue of autonomy as a means to regain control over their lands gained momentum, also because, the state government had pushed through an amendment to the Panchayati Raj Act in order to extend it to the scheduled areas. This was ostensibly done to satisfy the non-tribal poor who complained that they had no access to government development programmes since the Panchayati Raj Act was not applicable to the scheduled areas. The tribals feared that with the extension of the Panchayati Raj Act to their region, they would lose even the nominal control over local bodies which not only oversaw development programmes, but also provided control over local resource utilization, especially the forest resources.

A major problem with legislation aimed at preventing land alienation and restore alienated land has been that, apart from the fact of land being viewed as the property of an individual, no cognizance is made of common property resources such as forests which are a crucial source of livelihood for the tribal communities. Thus even were alienated land is restored, or in project affected areas, land is given as compensation, no compensation is made for the loss of access to forest resources. The restoration of the rights to the forests is therefore a key demand of many tribal movements.

Various forest acts dating back to colonial rule took away control over forests by tribal communities and extinguished all customary rights of the people to their resources. Loss of land due to land alienation was accompanied by loss of rights to forests, and CPRs were rarely compensated or replaced. Thus the loss of access to forests added to the process of land alienation in reducing endowment bundles of tribals, and reduced their capabilities. Loss of access to forests, as we shall show in the next section also took away the entitlement to ones own labour, since there was no scope to use ones own labour endowment whose product could be exchanged in the market.

On the other hand for certain groups, as Suryanarayana and Gangadharan (1982) show, providing land for cultivation in return for giving up access to the commons, also led to severe entitlement failures and loss of capabilities. The Chenchus in Andhra Pradesh for instance, who are essentially food gatherers, agricultural settlement programmes were a massive failure, as they simply did not have the skills to take up agriculture. Rather forced settlement resulted in their inability to use their food gathering skills as a livelihood strategy.

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8 These include the Andhra Pradesh Scheduled Area Rythu Sangam and the Aikya Karyacharana Raithu Committe.
9 This is the “tudumdebba” movement under the Adivasi Girijan Hakku Poratu Samiti.
10 This was the Panchayati Raj Act (second amendment)Extension to Scheduled Areas 1997. One of its proposals is to make non-tribals members of the gram sabha.
The commons also had symbolic uses. It is well known that land for indigenous peoples around the world had symbolic and sacred values in addition to more mundane uses. Likewise forests and groves also had symbolic importance used for building cultural and social capital which also significantly enhanced the capabilities of individuals and communities in their strategies for survival. Tribals in most parts of the country make use of land given to them in lieu of certain duties and responsibilities for the community. Loss of land thus also led to a break up of a network of duties, rights and responsibilities which were not made up by the new legal structures however fair they may be. Cultivation practices for many tribal communities are based on the custom of cultivating land as a community. This involved different practices and sharing of skills, and involved relations of dependence. Loss of capabilities thus also result from changed in cultivation practices resulting from loss of commons and break up of traditional methods of cultivation and farming.

Thus in a number of ways, plural management systems, and diverse subsistence strategies that had evolved over centuries were destroyed by modern changes. Even during the British period there were conscious attempt to maintain plural administrative and legal system. In 1839, the British government excluded tribal areas from normal administration in the country. The 1874 Scheduled District Act stated that some enactments were not to be enforced in Scheduled (tribal) areas. A key act - Tribal Areas Regulation of 1949 - prohibited lawyers from representing non-tribals recognizing a crucial area of lack of capabilities among tribals and trying to compensate for a lack. In fact because of the very structure and nature of modern legal systems, even the most fair and just law can be taken advantage of by non-tribal groups using the paraphernalia of law books, the constitution, lawyers, judges, and courts. Jeremy Webber (2000) has also drawn attention to another issue which makes it imperative to allow scope for indigenous legal systems. Flexibility, capacity for change, and tolerance for multiple and shifting interests characterize the legal systems of some indigenous peoples. They "provide a sphere, protected from non-indigenous interference, in which (a certain kind) of entitlement can continue to operate without the formalization and rigidity that judicial enforcement would inevitably entail" (p.86). Ramesh and Rao in the context of the Andhra region that is the focus here, speak of "litigation as the dominant barrier" between people and institutions In fact litigation de-capacitates capabilities in a major way" leading to what the authors call "legal exclusion of the people". Institutional and legal pluralism can mitigate litigation and empower communities to deal with conflicts in ways that are not de-empowering. Rae et al (2001) also draw attention to the "value of customary institutions with respect to resource use and inter tribal conflict resolution mechanisms" in rangeland management. Pointing to the inherent flexibility of indigenous systems, they press for considering land tenure and local institutions for affording local legitimacy.

It is therefore extremely important that even within the ambit of a common constitution measures be sought out to protect the interests of certain groups through laws and legal systems which are not uniform and which increase the capabilities and entitlements of these groups. Special laws to prevent land alienation including presumptive clauses (see above), greater autonomy in administration, prohibition of lawyers from appearing in cases involving them, recognizing rights to commons - all these reflect a truly pluralistic spirit which is now sought to be destroyed by modern elite landed interests.
III. IPRs and New agricultural technologies: implications for exclusion

Developments in biotechnology and genetic engineering have introduced new options in agriculture. Many of these have controversial effects, and are being opposed by environmental activists around the world. However while the opposition to these new technologies in agriculture have come from activists, scholarly studies charting the actual impacts for peoples' livelihoods have been few partly because of the low levels of adoption of these technologies. In this section we attempt to logically develop some of the consequences of these technologies for peoples' capabilities and entitlements, and secondly, to discuss the ramifications of these for intellectual property rights. It is argued that new IPR regimes threaten people's abilities to cope, adjust and innovate in order to adapt to changes. Environmental consequences of these new options such as loss of biodiversity also significantly impair community resilience in the face of stresses and shocks, and environmental, demographic and economic changes.

The specific focus of this section is on a) unequal benefits deriving from these technologies, and b) their impact on social exclusion for specific groups and categories.

It is attempted to demonstrate that these technologies, despite their benefits, perpetuate inequalities among groups within a community and between nations and economies. This occurs through excluding people from access to forms of knowledge, skills, techniques, and markets, which are important for subsistence, survival and for competing in a globalized economy.

Despite, or precisely because of large-scale adoption of new technologies, yields are rapidly declining in most parts of the world in agriculture, which is compounded by loss of soil fertility, and increased pest attacks. The impacts of these are most dramatically seen in the suicides of farmers in parts of India, over the past few years, attributed to indebtedness, loss of control over the production process, and the unsustainability of their livelihood patterns.

However the focus here, is specifically on the products of modern biotechnology and genetic engineering including GMO (genetically modified organisms). Several environmental consequences can occur as a result of using GMO seeds. For instance, the influence of a genetically engineered organism on the food chain may damage the local ecology. The new organism may compete successfully with wild relatives, causing unforeseen changes in the environment. Once genetically modified bacteria and viruses are released into the environment it is impossible to contain or recall them. Unlike chemical or nuclear contamination, negative effects are irreversible. Toxins introduced into plants to resist or kill pests may end up killing beneficial species such as butterflies, bees and beetles as well. Such crops have the capability to accelerate evolution of resistance in pests and the evolution of 'super pests'. Once pests become resistant to pesticides, it may lead to higher use of pesticides and higher rates of crop failure. This will lead not only result in more debts and more suicides but will wipe out both our biodiversity and our farmers. Some scientists however state that plants genetically engineered to be herbicide-resistant will greatly decrease the amount of herbicide use. However, farmers, knowing that their crops can tolerate the herbicides may use them more liberally, leading to extermination of beneficial plants and organisms. By increasing production costs through increased use of purchased GMO seeds and inputs, these technologies thus may have deleterious effects on the livelihoods of farmers in developing countries. They also increase dependence on external agents such as seed and pesticide dealers.

Insects, birds, and wind can carry genetically altered seeds into neighboring fields and beyond. Pollen from transgenic plants can cross-pollinate with genetically natural crops and wild relatives. All crops, organic and non-organic, are vulnerable to contamination from cross-pollination. In the case of genetically engineered seeds, all the seeds have identical genetic structure. As a result, if they are planted over a wide area, and if a fungus, a virus, or a pest develops which can attack this particular crop, there
could be widespread crop failure. Not only do these problems raise the issue of genetic pollution, but also as we shall see, fundamental issues relating to protection of indigenous knowledge and products vis a vis intellectual property rights of scientists and corporations arise. The existing means of resolution of such conflicts are invariably biased towards MNCs.

Apart from the scientific / technical differences which have consequences for the environment, plant behaviour and human metabolism, other differences emerge when the principles of modern biotechnology are put into practice. It is interesting to note that differences in social and economic impacts noted by scientists in third world situations due to modern technologies, are not even mentioned by those in the first world. The implications for developing countries include those for biodiversity, problems related to technology transfer, knowledge and skills retention for women, and the role of privatization in influencing the choice of research area in terms of commercial versus social considerations. Arguments for 'substantial equivalence' (of new technologies with older ones) then are derived from a narrow, laboratory based, reductionist view of the science of genetic engineering. Laws relating to the testing, use, production and patents of these technologies then do not even consider the social and economic consequences of these technologies, and are only concerned with certain kinds of private property rights. Thus assessments of costs and benefits of these technologies do not touch upon many social, economic, and cultural issues of communities which are affected by the new technologies.

While environmental consequences of technologies inevitably have impacts for communities dependent on them, the situation is starker in developing economies where there is a greater degree of dependence on natural resources for survival and subsistence. For instance the loss of biodiversity has an impact in terms of increased abiotic stress. Farmers may have a reduced choice of mechanisms in terms of varieties and options for adapting to drought, low fertility soils etc. Under conditions where much of the crop originates from seed bought from companies, seed renewal is not adequate, since the quantum of saved seed is less, and hence there is a deterioration in the quality of seeds. Gradually farmers are forced to depend more and more on biotech companies for their seeds. In many parts of the world there are already reports that farmers plant GMO's regardless of market demand because there are not enough regular seed to go around.

Such large-scale homogenization resulting from increasing adoption of genetically engineered and transgenic crops are likely to worsen the ecological problems already associated with monoculture. Unquestioned expansion of this technology into developing countries may not be wise or desirable. There is much strength in the agricultural diversity of many of these countries, and extensive monoculture should not inhibit or reduce this diversity, especially keeping in mind consequences in terms of serious social and environmental problems.

Monopoly capital in the agri-food business has a tendency to create broad international markets for single products, thereby simplifying cropping systems and creating genetic uniformity in rural areas. Large areas planted to a single crop variety become quite vulnerable to new matching strains of pathogens or insect pests. Moreover, widespread use of homogeneous transgenic varieties will inevitably lead to "genetic erosion," and a sharp reduction in biodiversity.

Much of modern technology ostensibly at the service of the poor then, even if not by design, at least by ignorance, have reverted back to the much reviled and derided 'top down' approach of development. Small and marginal farmers typically plant several different varieties on their land, tailoring their choice to the characteristics of each plot, in terms of drainage, fertility, consumption needs etc. However, such options cannot be easily developed with current top down and highly centralized research and extension structures and methods. Formal research methods and research systems simply are not equipped to handle the complexity of physical and socio-economic conditions in much of third world agriculture. Thus numerous
variables important to farmers have to be 'reduced' or ignored altogether in order to produce new technologies.

Genetic engineering is the very antithesis of recent approaches such as agroecology, farming systems or participatory, farmer-led research. A purely technological approach ignores real alternatives. It ignores the mixed crop livestock systems, and the use of indigenous seeds and inputs. HYV and GE are approaches which are reductionist; and are decontextualized from the specific systems in which farmers eke out their livelihoods. At best improvements are at the cost of other components of a livelihood or farming system. At worse, it exacerbates existing problems. Diversity was and is a central feature of the old strategies whose function was to share scarce resources such as water, nitrogen, soil nutrients, light, and energy resources.

In the specific context of developing countries, not only do their economies become more and more dependent on the metropolitan economies, leading to further underdevelopment, but significant sections of society get marginalized and excluded from the production process which adversely affect their well being, and disempowers them by taking away their capabilities to function and earn a living for themselves.

Historically in order to survive under such conditions, farmers have attempted to adapt agricultural technologies to their highly variable but singular circumstances, in terms of agroecological, socio-economic, and environmental factors including resource bases, access to institutions, and climatic conditions. Farmers have thus evolved complex sustainable livelihood systems which balance risks related to drought, market failure, pests, etc. with factors such as labor, investment, nutrition, weather patterns, etc. The agrarian systems that evolved were characterized by multiple annual and perennial crops, animals, fodder, and a variety of foraged wild products. Under such highly varied circumstances, uniform varieties, or precision techniques such as those introduced under the green revolution, and genetically engineered or 'transgenic' innovations, are unlikely to be useful for many such farmers. On the contrary further marginalization of the rural poor is likely.

The social and economic consequences of loss of biodiversity are quite severe. Farmers are unable to innovate and adapt to changing conditions, drastically bringing down their capability levels. The endowments that they do have begin to yield less, leading to both direct (production) and trade entitlement failures. Farmers are forced to be part of globalization since industrial agriculture, export orientation and commercialization lead to homogenization and a preference for standardized products. The increasing difficulties of transnational agribiotech firms in maximizing their profits compounded with huge amounts spent on research for which there are little returns, has meant that they develop varieties with wide adaptation. This also results in loss of biodiversity. Farmers are forced to be part of this process of reducing biodiversity through market mechanisms of a decline in prices for local varieties, and pressures to adopt new technologies for their potential gains.

Several of the innovations of biotechnology directly threaten the independence of farmers around the world. Vasavi (1999), commenting on cotton farmers suicides in southern India indicates that commercialization of agriculture and/or the introduction of technological innovations result in the 'separation of the economic dimension of local agriculture from its established cultural bases,' since the social implications in terms of 'dissociations' and 'dissonances' within society', are not considered. In "privileging the economic impetus of taking to commercial agriculture, many had overlooked the importance of retaining social ties", she argues pointing to decrease in social capital within the village and increasing dependence on external commercial agents.

Since biotech companies have invested millions of dollars in research, they naturally wish to get back returns at the earliest. When farmers buy seed of genetically engineered varieties, they have to sign a
contract that outlines the rules of use. For example, they are not allowed to save any of the seed from their crop to plant the next season. Saving seed is a common practice used for thousands of years, but companies like Monsanto forbid saving, reselling, or exchanging seed, requiring farmers to buy new seed from the company every year. Companies can legally patent biotech crops because the plants are basically creations of the company -- there is no way they could possibly exist naturally. They contain genes from bacteria or other organisms spliced together in laboratories. Monsanto for instance has taken several farmers to court over this issue and has accused farmers using saved seeds in Canada and the US of infringing on their intellectual property rights, but many of the farmers claim the wind blew the GMO technology into their fields which is difficult to disprove. Thus the sustainable practice of saving seed and cultivating the land now has become an unsustainable form of livelihood due to the forced dependence on an external agent from whom inputs are to be purchased. Farmers then cease to have complete control over the production process, and also cease to have the ability and freedom to experiment, since that process can only be carried out by the owner of the technology.

Farmers and farmer organizations in India have also expressed fears about the enslavement of farmers to multinational and local corporations and a loss of freedom and choice in their cropping patterns and sources of livelihood. The family farms of the poorer nations depend on saved seed for survival. They are too poor to buy new seed every year. Biotech companies also patent technologies and products in the development of which they have no hand. American corporations have patented Basmati rice, neem, and quinoa, taking advantage of indigenous knowledge and centuries of selective breeding by small farmers without giving anything in return. Thus there are very real fears of farmers losing access to traditional knowledge and resources and becoming enslaved to MNC who patent varieties in which they have very little contribution. The loss of knowledge - which is a key community endowment and is used to prevent entitlement failures by providing the ability to adapt, is major outcome of modern technologies and laws (in the form of patents and IPRs) associated with them.

New international and national level laws and agreements are supplemented by technological tools to get greater control over agricultural production and prevent local level adaptations and innovations. Contracts are very difficult to enforce in developing countries and also involve costly litigation. Transnational biotech firms therefore have come up with new sets of technologies which make IPRs redundant. These are usually referred to as Genetic Use Restriction Technologies. This is most clearly reflected in the Terminator Technology, which causes crop seed to become sterile at harvest time. A terminator seed will grow, but the seeds it produces are sterile, thus effectively killing the process that let farmers save and sow their own seeds. This will entail disempowerment of farmers, increased dependence on corporations, loss of traditional skills and indigenous knowledge, and a decrease in the ability to experiment and innovate.

In addition to the above processes, changes have been brought about in most countries with reference to PBRs or Plant Breeders Rights. Earlier in most of these act farmers rights and privileges in saving, storing and reusing seed were granted. These rights have gradually been eroded through many national and international treaties and acts. For instance farmers' rights in the Plant Variety Protection and Farmers' Rights Act in India has been diluted and they cannot now sell seed. This severely curtails farmers' abilities to experiment and innovate especially in conditions when new technologies fail and farmers have few other alternatives. Many studies have demonstrated the importance of local seed systems in sustaining agricultural systems in the absence of well developed public and private sector seed systems. Thus the consequences of the ban on farmer to farmer sale of seeds effectively means that even when appropriate technologies and options are available, households and communities will not be able to use their endowments to exchange them for appropriate commodity bundles, due to lack of access to these options such as seeds.
In addition to the Terminator Technology, there are a whole series of technologies that are labelled by critics as Traitor Technology. The thrust of the Traitor Technology is that for the plant to grow and yield up to its potential, farmers have to apply various company supplied sprays in conjunction with various company herbicides/insecticides to turn on genetic 'switches' that control specific characteristics such as high yield or pest resistance. Most innovations in agricultural biotechnology are profit-driven rather than need-driven. This is best illustrated through a review of the major technologies on the market today such as herbicide resistant crops like Monsanto's "Roundup Ready" soybeans, which are tolerant to Monsanto's own herbicide Roundup, and Bt crops which are engineered to produce their own insecticide. In the first case, the objective is to win a greater herbicide market-share for a proprietary product. In the second it is to boost seed sales at the cost of damaging the usefulness of a key pest management product - the *Bacillus thuringiensis* based microbial insecticide which is used by many farmers, including organic farmers, as a powerful alternative to insecticides. These technologies have been developed by biotechnology companies to intensify farmers' dependence upon seeds protected by intellectual property rights, which conflict with the traditional rights of farmers to reproduce, share/sell or store seeds. Thus corporations will force farmers to buy their brand of inputs and will forbid farmers from keeping or selling seed. By controlling germplasm from seed to sale, and by forcing farmers to pay inflated prices for seed-chemical packages, companies are determined to extract the most profit from their investment. Laws now become infructuous as technologies take over their function. A key threat to legal pluralism then emerges from modern technologies.

Another technique to control farming operations is by linking chemicals and seed development, and by developing technologies to protect seed and plant from their own chemicals, corporations seek to accelerate increases in expenditures per unit for seeds plus chemicals, delivering significantly lower returns to growers. Companies which are developing herbicide tolerant crops are trying to shift as much per unit cost as possible from the herbicide onto the seed via seed costs and/or technology charges. Increasingly price reductions for herbicides will be limited to growers purchasing technology packages. For multinationals it is infinitely more profitable to sell seeds programmed to commit suicide (or become sterile) at harvest. This will force farmers to pay the company in order to obtain the chemicals to have them re-activated for the next planting either through a seed conditioning process or through the purchase of a specialized chemical that brings saved seed back to life. Such technologies also shift the cost of developing and producing seeds to the farmer. The seed companies will only have to sell seeds and not produce, transport, or stock them. Farmers will reproduce seeds, and either through royalty/license fee mechanism or through chemically induced germination, the seeds will be made 'fertile'. As these seed companies increase their control of the world market, there will be diminished interest in future plant breeding and research. Furthermore, farmers will not have any power over what to grow or plant and will be "in a position of absolute dependency" on multinational seed companies. In line with industrial workers in developing countries producing products for the global economy who have become part of the putting out system, farmers also will become putting out workers with little control over their skills, tools, etc. Such technologies thus directly reduce capabilities through a deskilling process whereby gradually, farmers - especially women who are mainly involved in seed selection and saving - lose the ability and freedom to innovate. Knowledge of germination requirements, seed preparation, weather, soil, breeding of farm animals, knowledge of the feed value of fodder species, fuel of fire wood types all have vested with women traditionally. Enormous disempowerment and exclusion from the economy and decision making thus occur for women due to the introduction of certain kinds of new technologies.

Thus genetically engineered seeds seem to be designed for agribusiness farming, not for the capabilities of small family farms of the developing nations like India. How are they to buy and distribute the required chemical inputs? What will happen to their livelihoods if they are made dependent for all their inputs on
multinational firms? How will farm households manage risk in conditions of uncertainty and loss of diversity - which is a major source of risk management?

Perhaps the most significant marginalization that can occur as a result of the flow of genetically engineered products is of rural women involved in agricultural operations. Agarwal has argued that "women's access to land and livelihood ….. "is also important for improving productive efficiency" on farms. Loss of biodiversity, influx of new options accompanied by a decline in the overall choices available are most likely to affect women living and working on farms. Two broad impacts on women can be identified. At a first level, traditionally in most Asian, women have been the repositories of knowledge, skills and techniques in agriculture, especially those pertaining to saving and storing seed, but also, and more importantly, breeding for specific traits. The 'hybrid' revolution forcing farmers to buy seed has already severely impacted on these skills and knowledge base, which has been eroded. The complete appropriation and alienation of the capacity to innovate and experiment (en)gendered in genetic engineering and biotechnology will further exterminate these skills and forms of knowledge.

At another level women also will suffer from loss of biodiversity and an increase in monoculture, especially a shift away from mixed cropping and crop-livestock systems. This will accelerate ecological degradation thereby making it difficult to obtain water, fuelwood, and fodder - all activities carried out by women. This impacts on time-allocation patterns with consequences for larger development issues including health, employment, child-care, education and so on. The ability of women to better manage households under conditions of scarcity is also compromised as sources of income in cash and kind dry up. Traditional cropping systems catered to a variety of needs - food, fodder, and fuelwood, which is not the case with monoculture, and with varieties bred for specific traits which normally do not meet other needs. Large scale decline in the livestock economy in India, especially the absolute numbers of cattle, are directly related to decline in fodder availability resulting from shifts in cropping systems. It is to be noted that in traditional mixed crop - livestock systems, output and income deriving from livestock vested primarily with women.

Entire communities and nations are thus pushed to the margins of survival, because of reductionist perspectives which ignore the complex survival and livelihood systems of the poor in developing countries.

An example which clearly brings out the implications of loss of biodiversity for reduction in capabilities in a major way is the recent controversy over 'golden rice'. Iron, protein and vitamin A deficiencies are the chief causes of malnutrition in much of Africa and Asia. These result in anemia, impaired learning ability, increased susceptibility to infection and reduced capacity to work (owing to lack of energy). The consequences also include reduced life spans, and disabilities such as blindness. Recent innovations in genetic engineering include rice varieties which are fortified with iron or vitamin A and which have been touted as significant achievements for modern biotechnology. One of these is 'golden rice' which is a genetically engineered rice variety fortified with Vitamin A.

Nutritionists argue that vitamin A deficiency warns us of broader dietary inadequacies associated with poverty, as well as with agricultural change toward monoculture. People's diets have been reduced to rice (or some other cereal) because of this and thus people suffer many dietary illnesses. It has been observed that Vitamin A deficiency is more widespread in those parts where rice or wheat forms an integral part of the diet compared to areas where the major staple is maize, millet or sorghum. These in fact provide considerable amounts of vitamin A and other nutrients including higher levels of protein. Unimaginative poverty reduction policies such as the Public Distribution System in India have aggravated this problem by replacing traditional cereals and providing the poor with rice or wheat at cheap prices. Thus growing poverty has resulted in the poor becoming more dependent on rice alone for their dietary requirements.
The problem therefore isn't one of rice not containing a particular nutrient, but the absence of dietary diversity resulting from poverty and monoculture.

The issue that is highlighted here is that in areas where previous green revolutions have taken place, reduced dietary diversity is an outcome of reducing cropping diversity. Also in the green revolution areas, skewed use of chemical fertilizers especially focussing on yield enhancing fertilizers such as nitrogen, has meant a concomitant neglect of micronutrients. These have had their effects on food quality, diet and nutrition. Reduced capabilities in terms of health are therefore related to loss of biodiversity. While balanced nutrition is more and more becoming a problem in rural areas, loss of biodiversity also has reduced access to traditional plants which were used for medicinal purposes.

In the words of Vandana Shiva then, "diversity … is the matrix from which an alternative calculus of productivity and skills can be built", and provides a crucial reason for preserving biodiversity especially in areas of poverty. Acknowledgement of "women's work and knowledge is (not only) central to biodiversity conservation as she argues, but in terms of the framework outlined in this paper, loss of diversity and new technologies "displace women from decision making and custodianship rights to seed and (are transformed) into unskilled labour". The transition from skilled workers to unskilled labour marks a decline in capabilities and leads to entitlement failures that partly explain the 'feminization of poverty' that is being observed in rural areas of the developing world.

Another important issue that is well summarized by the political scientist Arun Agarwal is that decline and devaluation of traditional indigenous knowledge also leads to the devaluation of traditional authority and institutions with implications for conflict resolution. Power equations change as those with access to 'modern' knowledge have the ability to dictate terms. In a Foucauldian world where knowledge is closely enmeshed with power, loss of knowledge / power can mean significant reduction in entitlements in terms of production declines, bargaining capacities, and cooperative behaviour in the realm of production and exchange.

These issues emerge with greater clarity in the following section on common property resources.

IV. Common property resources: a test case for legal pluralism

It is in the arena of CPRs that a case for legal pluralism can most clearly be made. Recent research in this area from around the world, but especially in South Asia have brought out the crucial significance of common property resources for subsistence of the rural poor. However the actual processes involved in the livelihood strategies of the poor who are dependent on CPRs is still not well known. While direct impacts of decline and degradation of CPRs have been brought out in several studies, what is not so well analysed is the way in which decline of CPRs affect other kinds of entitlements - both direct and trade entitlements. The implications for productivity decline, labour entitlement, and declining livelihood options are the focus here, as is an attempt to understand the different legal issues involved. It is important to remember that "there exists a level of complimentarity between common property resources and private property resources" (Babu, 1998: 2) and that decline of CPRs reduce entitlements and capabilities at an individual or household level. Jodha has pointed out that "performance of crop farming is better" (1995:558) with higher access to CPRs; Beck has exposed an important ambiguity in the difference between private property and common property by pointing to the "use of private resources in common" including those that are negotiated by the poor: access to fallen fruits, gleaning of grains from privately owned farm land etc. (Beck, 1984: 187). Sinha and Herring (1993: 1425) also mention the use of "private property for common good". A comparative analysis of traditional norms for regulation and maintenance of commonly held resources, with newly introduced formal, and legal regulations thus help us to
understand the implications of each for changes in the entitlements and capabilities of communities dependent on such resources.

In India, traditional village-based institutions have, in the past, regulated access to common property resources and enforced users' obligations related to investment for conservation and development of village common property resources. Governance mechanisms were evolved wherein users of a CPR respected their village institutions and contributed to the maintenance of common lands and other natural resources. Violations of restrictions were met not only with stiff penalties but also included restitutive forms of justice, of importance, in restoring not only the majesty of law, but of the natural resources as well. Modern legislative systems have largely destroyed or replaced the authority that village organizations had in managing CPRs.

To begin with a brief statement on the decline of CPRs - it is estimated that twelve percent of the poor peoples income in India is derived from CPRs which include community pastures, forests, wasteland, ponds, rivers, rivulets, their banks and beds. Jodha, who has written extensively on the decline of CPRs is of the view that this decline not only represents the degradation of a community asset but also leads to an "erosion of survival options". He also states (Jodha, 1995 and 1986) as other studies have shown, that CPRs are a veritable source of employment, Jodha estimating that they offer more employment than targeted employment generation programmes. During lean seasons, CPRs are an important means of subsistence, keeping starvation at bay.

Most important of the products from CPRs are fuel and fodder. In a 'scoping' study, Babu shows that the landless labourers and marginal farmers benefit most through enhancement of access to CPRs since they need to purchase less of fuel and fodder. In the absence of a capacity to buy, and in a scenario of CPR degradation, the poor, especially women have to travel longer distances and spend more time in searching for fuelwood and fodder. Not only does this decrease the labour entitlement of women, but it also leads to a decline in the amount of time available and allocated for other activities which may be more welfare inducing including wage labour, education etc. Beck (1994) also demonstrates the way in which decline of CPRs or access to CPRs decreased the time available for gleaning on private farmland significantly reducing access to crucial resources for subsistence. Decline or degradation of CPRs thus takes away the right to ones own labour or reduces its entitlement. Pasha (1991), in studying the use of and access to fodder from common waste land, points out that "animal husbandry provides employment to surplus labour", especially old people and children whose labour would otherwise have gone 'waste. Stating that "animal husbandry is no longer neutral to economic status of individuals" as a result of degradation of village commons, pasture and grazing lands, Karanth (1992) also mentions the loss of time for other more productive activities due to increased amount of time spent on foraging for fodder and grazing livestock in distant grazing lands.

The decline in the ability to exchange one's labour - and the decline in the amount of labour time one has - for an appropriate welfare inducing commodity bundle is only one side of the picture however. Das (2000, 4340) points out that contrary to popular perspectives in certain regions, labour shortage was actually an incentive "which gave rise to these institutions" (regulatory mechanisms and bodies for conservation of CPRs). Labour scarcity meant it was much cheaper to exploit resources closer to the village and hence the importance of village common property resources. In terms of opportunity costs then common property resources enabled individuals to allocate labour in such a way as to maximize its entitlement.

Kerr and Sanghi (1992), in studying indigenous soil and water conservation technologies conclude that these reflect "relative availability and opportunity cost of different resources", including materials, human labour, animal power and cash. Degradation of commons crucially impacts on other resources such as
labour, animal power, and other materials with increased inputs in these areas progressively yielding less and less.

The multiple uses of CPRs and the issue of interrelated rights on CPRs is a constant theme in several studies on common property resources. Failure to consider these in new rules, laws and institutional arrangements is frequently cited as a factor adversely affecting those dependent on CPRs for their livelihood. Jodha (1991), for instance points to the possibilities for diversification and flexibility due to enhanced availability and access to CPRs, while also drawing attention to the interlinkages among different production systems - crop, livestock, harvest from CPRs etc. Thus what emerges clearly is that degradation and / or loss of access to the commons does not just result in loss of those resources that people had access to, but also indirectly affects other livelihood systems. They also lead to the inability to use ones own labour and harvest CPR products for exchange and consumption.

What is also emerging in a fairly obvious manner from the studies is that common property is a highly nuanced term and includes resources which are conventionally and by law regarded as private property. For instance, in many parts of the country, farmers, labourers and cattle owners have grazing and animal penning rights on privately owned farmland. Kerr and Sanghi (1992) argue for a "need to relax laws restricting harvesting and transporting trees from private land", which was a traditional practice in the semi-arid villages they studied. Reference has already been made earlier to other kinds of common and negotiated access to private property such as gleaning of grains. In conditions of instability in agricultural output for the poor then, CPRs constitute a major source of livelihood. Attention has also been drawn in this paper to the fact that while privately owned resources are sometimes negotiated by the poor for common access, the health of CPRs also affects the efficiency of cropping systems through preventing soil erosion for instance, or by enabling farm households to go in for marketable options since certain needs are met from the commons. Thus healthy CPRs and access to them enable poor households to make use of their endowments and get fair entitlements by using their resources, and capabilities, including labour, skills, and knowledge in an optimal manner. This requires appropriate legal and institutional support which enjoys local support and legitimacy.

This becomes more evident if one looks at different types of common property resources, such as watersheds or soil and water conservation technologies. In such cases there is a greater need to not only maintain commonly used resources but also to consider the consequences of practices on privately owned land for the commons. As Johnson (2001) argues, in these conditions, conservation of commons and commonly managing private resources "brings in new topics into the research agenda like organizational behaviour, collective action, and conflict resolution". Whether it is joint forest management or participatory watersheds, successful cooperation for conservation is hindered by a lack of appropriate institutions. There is frequently a need for institutions to facilitate negotiations among different groups and help enforce agreements. Institutions and legal arrangements need to "consider local nuances, structures of rights and duties", in order to avoid a situation where, "land is laid waste due to a lack of property rights over it" (Chopra, 2001), and due to a lack of appropriate institutional arrangements to enforce rights and obligations. Hence the need to study the entire issue of capabilities and entitlements within the framework of law, and pay special attention to the issue of legal pluralism. Chatrapati Singh, a pioneer in the study of the commons, writes of the need to "examine the legal status of resources", especially those pertaining to "rules of acquisition, utilization and regeneration", all of which together "constitute the actual arena of possibilities", in terms of livelihood choices11.

In talking of legal and institutional arrangements, it is important not to forget the role of social security arrangements that finds mention in Sen's own analysis of entitlements. A study of the spread of opportunities and benefits from common property fisheries in Kerala is most enlightening in this regard.

11 Cited in Sinha and Herring 1993, p.1425
Kurien and Vijayan (1995) in their study distinguish the social security features of the traditional system of small scale fishing, wherein custom bound claims on income from fisheries by widows, handicapped, and service providers, could not be fulfilled due to changes in the ownership of fishing resources and the legal systems affecting fishing. They also mention the spread of income from fishing for wage labourers and the complex system of work sharing which entitles unemployed workers to employment through a system of rotation. Community taxation of income and earnings were used for generating benefits for the community and especially those who were at the margins of society. A "dense cluster of claims and wages" (E.P.Thompson, "The making of the English working class", Harmondsworth, Penguin, 1986, p.239, cited in Beck, 1994) evolved over a long period which is characteristic of CPR based livelihood systems in most parts of the country.

These claims have either been customary in nature, or are negotiated from time to time. Both the fixing of property rights (both common and private) by law, and the degradation of resources (again both common and privately owned), can result in denial of customary rights, and the refusal to negotiate for transfer of rights. In fact commercialization has also played an important role in denial of rights to certain resources that were negotiated. For eg. rights to gleaning, rights to fallen fruit and so on. (That this is not a recent phenomenon is attested by Marx's comments on this in his article on the "Debates on the Law on theft of Wood". Picking of berries in forests which was a customary right was proposed to be made into a theft, partly as a result of the commercialization and export of these). The important point to note here is that commercialization and changes in property laws go together, and it is not only individual land holders who can deny traditional rights, but the state as well. Since the colonial period, forests in India have been taken over by the state through legislation. The right to forest produce now is either contracted out or given as a favour by state agencies. The monopoly of the state and its paternalistic attitude has meant that where access to forest produce is permitted, exchange entitlements may be flawed. The Andhra Pradesh tribals discussed above for instance are forced to sell a 'minor' forest produce - mahua - only to the forest department at prices specified by the government. The inability to sell in the market at market determined prices, then means that the forest produce is likely to be exchanged at below its entitlement. Here restrictions on market participation directly emerges from state ownership of the property through a uniform nationwide law.

Changes in capabilities and e-mapping then are a result not just of degradation of CPRs, or technological changes, and demographic pressure. In fact these shifts as well as the decline of CPRs are a reflector of changes in legal and supporting institutional arrangements. This makes it imperative to study entitlement failures by situating them in the context of changes in legal systems and frameworks.

In India, customary and traditional arrangements for common property resources have been in existence for a long period. Even during the British period for instance, despite wholesale takeover of forests, ownership of common lands was vested in the community, especially in the mahalwari system of land settlement. Under the ryotwari system, even if ownership did not vest with the community, communities were allowed access to commons which were separately demarcated (Damodaran, 1991). State intervention and legal shifts, post-independence however transformed "a country of diverse land laws" (Brara, 1989: 2247) into a country of uniform laws at least as far as land and CPRs were concerned. As Brara indicates in her historical study of CPRs in the state of Rajasthan, the very act of recording and 'legalizing' or enshrining commons usage and access into written law through a settlement, … led to distortions that militated against the interests of those who were dependent on its produce" (1989: 2247). She also demonstrates the crucial significance of power relations in this process by observing that even where there existed "de jure pasture" classified for grazing (Brara, 1989: 2248), unequal power and lack of property rights took away access to commons by the poor and disempowered.

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12 On the part of those who owned or had rights to property.
Likewise as Bon (2000) shows, in the state of Himachal Pradesh, even though the Himachal Pradesh Village Common Land Vesting and Utilization Act of 1974 transferred common lands ownership from the panchayats to the state government, some groups such as the agripastoralists were excluded from access and use of village commons, since commons were "attached" by law to specific village communities. Arun Agarwal (1999: 167) in a study of pastoral nomads in Rajasthan provides a key argument that mobility for this group constitutes a key enabling factor in successfully negotiating for higher entitlements in the process of economic exchange, as well as helping them "to move beyond village politics and hegemonic structures". Excluding such groups from access to commons or forcing them to settle in one place to claim access to CPRs then can result in severely disrupting their capabilities in sustaining their livelihoods, and disrupt their e-mapping by tying them into dominant social structures. Das (2000: 4343), hinting at the role of "scarcity and need to conserve labour" in the origin of transhumance, again points to ways in which shortages such as those of labour can be overcome and turned into an advantage through mechanisms that depend in crucial ways on access to CPRs.

Customary legal regimes then provided both property and usufruct rights as well as flexibility of operation. This is in fact currently being seen as a key aspect of traditional or indigenous regimes, especially the aspect of "freedom for people to modify rules" (Bon, 2000: 2572) to respond to changed conditions. These conditions will include social, economic and environmental challenges. Arrangements are needed which enable communities and households to cope with and modify operational rules such as who uses what resources, when and where. In this context it is not sufficient to merely ensure legal entitlement without transferring ownership rights because people are not encouraged to implement customary rights and obligations in the absence of ownership rights. Secondly as Das again mentions "rules and regulations of the state lead to inappropriate resource use even in the absence of direct state appropriation" (2000:4450), but in conditions where other kinds of legal enforcement may have an effect on property rights, the situation worsens. Das refers to the redrawing of village boundaries impacting on village commons, which disrupts customary modes of management of the commons. He also mentions how in the absence of property rights for the community, the supra local authority was unable to "endorse (a) grass ban enforced by the village regulatory body" (p.4450) in the village he studied.

Agarwal and Ostrom (1999) in critiquing 'participatory' or 'joint management' programmes have made arguments that are now well established. In their critique of devolution policies and practices with reference to natural resources, they argue for enriching theories of property rights "by an attention to powers and capacities" (p.74), and an understanding in terms of "devolution of rights and capacities over a set of specific action domains at different levels of social aggregation"(p.74). It is not sufficient then to merely proceed with institutional analysis in enabling access for user communities. This kind of analysis has to be linked to differences in rule systems, levels of action, and hence the need for plural legal arrangements. They further state that "costs and benefits (of natural resource use practices and regimes) at an operational level are strongly affected by the bundle of property rights possessed by those involved" p.78). Collective choice decisions in order to be effective at an operational level must be supported by appropriate authority deriving from legitimate property rights at the appropriate level. This takes the entire discussion out of the domain of formal law into informal rules, norms, and decision making powers. Quoting Commons, the authors define property rights in terms of capabilities to state that "a property right is an enforceable authority to undertake particular actions in a specific domain (Commons, J.R. Legal foundations of capitalism. Madison: University of Wisconsin Press, cited in Agarwal and Ostrom, 1999, p.80)." The question of property rights then slips from one of holding the right to alienate the produce from that property to one of managing a combination of multiple rights and obligations arising from ownership of a property. This is where a legal system becomes extremely crucial to enforce and manage rights and obligations in a fair, just and equitable manner. The ability to manage, use and benefit from commonly owned property then reflects levels of capabilities and entitlements that contribute to the welfare of people depending on that property. If users of CPRs merely have "de facto user rights with no
rights to devise rules limiting use or requiring monitoring and other input resources” (Agarwal and Ostrom, 1999: 83), they are likely to be severely degraded over time. On the other hand as has been stated earlier, de jure rights without taking into consideration power relations will have the same effect of inequality of access, open access, and degradation of CPRs. The strength of customary systems of rights and obligations lie in precisely combining ownership rights with rights to manage and enforce rights and duties.

Providing clear titles and rights to communities however does not mean "carving up the resources into individual holdings that are privatized" (Dick, and Knox, 1999: 45), since this is not feasible for common pool resources. This is because, each unit or part of the resource is characterized by much internal diversity or differentiation and is dependent on and complementary with other parts, "making it difficult to provide all claimants and users with a viable piece of the resource" (Dick and Knox, 1999; 45). Such policies will break up existing arrangements for sharing of resources and conflict management leading to deterioration in the condition of CPRs. In arguing for legal pluralism then, one is arguing not just for clear demarcation of rights, but also in a contrary manner, making a case for indeterminacy. More than a hundred years ago, Karl Marx (1996) had stated that "all customary rights of the poor were based on the fact that certain forms of property were indeterminate in character, for they were not definitely private property, but neither were they definitely common property, being a mixture of private and public right”. In a remarkably prescient analysis, he also talks about the usefulness of a "twofold private right: … a private right of the owner and a private right of the non-owner”. Further, he goes on to say that "if, however, every medieval form of right, and therefore of property also, was in every respect hybrid, dualistic, split into two, and understanding rightly asserted its principle of unity in respect of this contradictory determination, it nevertheless overlooked the fact that there exist objects of property which, by their very nature, can never acquire the character of predetermined private property, objects which, by their elemental nature and their accidental mode of existence, belong to the sphere of occupation rights, and therefore of the occupation right of that class which precisely because of these occupation rights, is excluded from all other property and which has the same position in civil society as these objects have in nature.” (emphasis added)13. This is perhaps as strong a case for rights over commons for the poor, as can ever be made. The larger point that is evident here is that such rights are crucial for the survival of certain communities, who have no other source of livelihood, and so it can be exceedingly incapacitating to take away these entitlements from such groups. As if anticipating future debates on legal pluralism, for good measure Marx also makes a case for customary rights as legal rights, i.e. "customary right as a separate domain alongside legal right is therefore rational only where it exists alongside and in addition to law, where custom is the anticipation of a legal right." (Marx, 1996)

V. Concluding comments

A case has been made in this paper for retaining or developing pluralistic legal systems in the field of natural resources, with specific reference to property rights. A diversity of laws and rules vesting different kinds of rights in individuals and communities, it is argued enhances capabilities and entitlements for individuals and households, especially among the poor and the marginalized. This does not however mean simply providing additional legal rights or providing legal status to customary rights. As authors like Brara (1989) have shown in the Indian context, such simplistic measures may end up distorting the rights regimes in manners that disadvantage the poor. Rather, while accepting customary rights or non-constitutional legal or rights regimes, it is equally important not to just treat customary property rights as

13 Marx also added: "We demand for the poor a customary right, and indeed one which is not of a local character but is a customary right of the poor in all countries. We go still further and maintain that a customary right by its very nature can only be a right of this lowest, propertyless and elemental mass".
determinate sets of rules. Traditional or customary rights exist in the context of specific legal traditions that are themselves embedded in distinct institutional frameworks. Rights have meanings within - and are enabling in the context of - local laws, cultures, systems of production and exchange, patterns of social order, and conceptions of land use, land holding, and land tenure. Disturbance either in the rights regimes, or in social and institutional frameworks, may therefore be disempowering with consequent reduction in levels of capabilities. However, in the context of a dynamic, changing society, what is important to recognize is that communities and households are able to better adapt themselves to change, and retain their entitlements, if they have the ability to negotiate, bargain, and reorganize relationships of production and exchange; this can occur only of there is flexibility permitted by a pluralistic legal system. What this means is that it is not the relationship of people to land that determines their social relations, but rather it is the relationships between individuals that determines rules and laws pertaining to property ownership or land tenure as anthropologists have shown. Meanings of terms such as 'land' or 'property' are not uniform, and "different rights and obligations flow from differences" in types of resource units or elements (von Benda-Beckmann, 2001: 53).

Such a perspective plays a useful role in understanding how laws shape peoples’ choices as Houtzager (2001) has shown. According to the new institutionalism that Houtzager speaks of, expanded choice through appropriately formulated 'rules of the game', can provide resources for action to meet actors' goals and objectives, directly impinging on capabilities and entitlements, and preventing social exclusion that is otherwise a feature of unthinking modern legal reforms. The question that von Benda-Beckmann poses then of the "relative significance that different types of rights based in different normative orders have for the livelihood security" of the poor, can be answered in terms of the actual ways in which rights regimes and pluralistic legal systems impinge on their capabilities and entitlements (von Benda-Beckmann, 2001:53). Thus even if we accept his view that "social science or 'legal pluralism' cannot provide direct answers to pragmatic political and economic questions" (p.54), by adopting a capabilities and entitlements approach, it is at least possible to state, as this paper has hopefully shown, that social exclusion and marginalization can result from uniform and singular approaches to law and rights. On the other hand legal pluralism and recognition of different rights regimes can have empowering effects that directly impact on development, especially for the poor.

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