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PREVIEWING THE ISSUES

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This paper deals with some relatively unrecognised consequences of demographic changes and equally unrecognised processes behind these changes. Our thematic focus is on rural common property resources or common pool resources (CPRs) and their changing situation following the demographic changes in the dry tropical regions of India. Despite the decline in their area and physical productivity, CPRs constitute an important component of community assets in India as in other developing countries, and significantly contribute towards the people's sustenance. Hence, a need for looking at their changing status, the factors causing their decline and possible remedial measures.

In the mainstream debate on the subject the decline of CPRs is strongly attributed to population growth and subsequent land hunger leading to inevitability of decline of CPRs (McNicoll and Cain 1990). However, without denying the association between land hunger and shrinkage of CPRs, our contention is that above formulation explains the changing situation of CPRs only partially. A closer look at the changing CPR situation and changing features of population reveals several dimensions of the former of which, decline of area, (due to increased population pressure) is only one. The other dimensions of changes in CPRs due to demographic changes are seldom recognised by the main stream work on the consequences of population growth. The same is true about the recognition of involved qualitative aspects of population influencing the status of CPRs. This paper, with the help of field level studies reflects on these dimension of CPR changes and demographic changes, their causes and consequences. Accordingly, in the following discussion, we focus on CPRs as embodiment of multiple social and institutional arrangements evolved and enforced by the rural communities for protecting and harnessing their natural resources. The erosion or collapse of these arrangements leading to the decline of CPRs, is presented as 'unrecognised' or 'less recognised' consequences of demographic changes. They are unrecognised because of their qualitative nature and non-visibility at aggregative level. These arrangements are very basic in terms of inducing and sustaining community level collective concerns and group action for protection and management of CPRs. These arrangements manifest, what is described as 'social capital' at micro level.

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Next we deal with the factors behind the decline or erosion of social capital and related aspects, as important dimensions of demographic changes. Though increased population has negatively affected CPRs, the discussion shows that growth in the number of people affecting area and use of CPRs explains the situation only partially. Most of the factors and processes that adversely influence 'social capital' and related aspects, and thereby cause the decline of CPRs area, productivity and management, fall outside the demography of numbers. The qualitative changes in population i.e. changes in attitudes, perceptions and functioning as social groups through reciprocity, sharing, and networking etc, are caused mainly by the non-demographic factor or driving forces. These driving forces have their origin in state policies, market forces and the changing survival and growth contexts of rural communities. Admittedly, at times these changes (specially policies) might emerge as inappropriate responses to population pressure and associated poverty. For instance, state policies, following their failure to transfer surplus land from larger farmers to the landless, curtail the CPR area to give land to the poor. However, in most circumstances these policies emerge independent of population growth and accelerate the qualitative processes of demographic change, influencing status of CPRs.

What are CPRs? Manifestations of Collective Concerns:

Common property resources or common pool resources (CPRs) can be broadly defined as those resources in which a group of people have a co-equal use rights, specially rights that exclude use of those resources by other people. Individual membership in the group of coowners is typically conferred by membership in some other group, generally a group whose central purpose is not the use or administration of the resource (per se) such as village, a tribe etc (Ostoram et al. 1988, Bromley and Cernea 1989).

However, looking at the CPRs from 'rights' perspective may disguise the more important "obligations or responsibility" aspects of CPRs and the basic driving forces that help in shaping and enforcing the obligations. The above co-equal usage rights, responsibilities, and measures to enforce then, as mentioned earlier, are institutional arrangements evolved by a rural community to protect, manage and regulate the use of specific natural resources, which help the community in facing the constraints and risks and also in harnessing the opportunities generated by their natural resources. These tasks for a variety of reasons can not be managed with the individualised adaptation strategies of the community members (Jodha 1995). The effectiveness of CPRs as a collective strategy is directly linked to the community's concern, commitment, norms and group action to enforce them. Accordingly, any land resource with shared access right to the members of a group acquires the status of CPR only with their collective involvement in its management. The collective involvement in turn is a manifestation of community's attribute already described as 'social capital'. Accordingly once 'social capital' depletes (or collective management of resources declines) CPR becomes open access resource and its process of depletion begins as the evidence presented is the paper clearly shows it. However, to have a better idea of need and basis of collective strategies (manifested through provision of CPRs), it will be useful to briefly comment on the range of services and functions performed by CPRs, which satisfy the collective concerns and needs of the community. To facilitate an understanding of the above functions, it is essential to identify the CPRs. In the dry regions of India, CPRs include community pastures, community forests, waste lands, sacred groves, common dumping and threshing grounds, watershed drainages and village ponds, rivers, rivulets as well as their banks and beds. At times they are described to represent "uncultivated-half" of India.

A quick look at the products and services offered by well managed CPRs would indicate that they are not only the sources of physical supplies and income/employment for the people especially the poor, but they are a means to satisfy several social concerns and collective needs (Jodha 1995).

- (i) CPRs as a source of what is described as, "bio-diversity in bush" manifest the community's concerns as well as operational norms of the people managed biodiversity conservation systems, (as against the state managed biodiversity conservation systems in parks and protected wild), to serve current and future needs of the community and maintain positive ecosystem-social system links (Jodha 1996b).
- (ii) CPRs, generally comprising fragile and marginal land scapes unsuited for cropping are occupied by natural vegetation. Besides helping in protecting and harnessing of nature's diversity by the community, by falling outside the community's useintensification zone (through ploughing), they help reduce the chances of erosion of fragile lands.
- (iii) By influencing micro-climate, hydrological and nutrient flows in watershed contexts, CPRs act as support land for croplands and influence crop yields.
- (iv) By offering multiple products and services CPRs help in integrating the internal inequity-based diversity of community stakes in its natural resource base i.e. groups with different economic occupations can meet their diverse needs from the same natural sources, i.e., CPRs.
- (v) As a part of community's diversification strategy, the CPRS (due to non-covariate flow of products and input use when compared to crop lands) help in reducing the production risks for the community and in reducing social inequities.
- (vi) Finally, by providing a concrete, operational context in the form of required group action for their management, CPRs play invisible but significant role in the maintenance and constant renewal of social capital implying altitudes, approaches, and mechanisms supporting collective concerns and action, despite internal heterogeneities of a community.

The aforementioned contributions of CPRs are not easy to quantify except in terms of indicating some proxies (e.g., higher diversity, density of vegetation in well managed CPR units; or better performance of crop and livestock farming in villages with better upkeep

of CPRs; or very high share of CPR-generated income in the drought period sustenance income of the household). The later discussion on the bio-physical degradation of CPRs will reflect on some of these aspects. Since most of the above benefits are indivisible (and also less visible) the community with collective concern (and not individuals) can promote and protect the sources of such gains. However, besides the collective, indivisible and invisible gains, CPRs make several quantifiable contributions towards the community's sustenance.

Contributions of CPRs:

According to the detailed study of CPRs conducted over a period of four years, covering more than 80 villages from 21 districts scattered in seven major states in the dry topical region of India (Map, Figure 1), the important contributions of CPRs are as follows (Jodha 1986,1992).

- (i) The poor households (including agricultural labourers) and small farmers (owning less than 2 hectares of dry land equivalent) secure 66 to 84 per cent of their total fuel requirements from CPRs in different states. The CPRs account for 79 to 84 per cent of total animals grazing days in the case of the poor in different areas. The total employment through CPR-product collection etc., account for 137 to 196 workdays per poor household in different areas. This is more than per household employment days generated by public work programmes in rural areas in many states. CPRs generated income works out to Rs. 534 to 774 per household and account for 19 to 23 per cent of total average household income from different sources. The Gini-Coefficient of income as a measure of inequity declines from 44-50% to 33-41 % when CPR-generated income is included in household income for the village. The magnitudes of the above variables are slightly lower for medium size farm households and much lower for the large farmers in the study areas.
- (ii) Yet another set of data (covering all categories of households) from the same study reflect on the contribution of CPRs to private farming. For farming operations during pre-sowing to pre-harvesting period, CPRs directly contribute 31 to 42 per cent of the cash and kind inputs used. Indirect contribution through: sustaining draft animals, without private cost; sparing land from fodder cultivation for animals; and sparing crop by-products for sale (rather than feeding own animals as CPRs provide the substitute source of fodder) etc. are much greater. Such resource saving, which would potentially disappear in the absence of CPRs accounts for 68-76% to 84-96percent of total incomes or resources currently at the command of the farmers in different cases.
- (iii) Finally as a measure of collective risk minimisation strategy, CPRs contribute 42 to 57 per cent of drought year sustenance incomes of the households in different areas. The corresponding figures for non-drought years are 14 to 22 per cent respectively.

DECLINE OF CPRS:

Despite some unavoidable under estimation, the above data clearly show the rural people's dependence on CPRs and the latter's valuable contribution to their sustenance. However, despite this, CPRs are generally neglected and declining rapidly in different areas. The decline is visible in (i) shrinkage of their areas, (ii) bio-physical degradation and (iii) the loss of management systems. Table 1 summarises the decline of area in different states/districts covered by the study.

CPR-Area Shrinkage:

Accordingly, area of CPRs has declined by 31 to 50 per cent in the studied villages of different states during the early 1980s as compared to the early 1950s, when different states introduced land reforms, which influenced the status and treatment of CPRs. As the further investigations into decline of CPR area showed, the bulk of the area decline was due to the governments' undeclared policies of privatisation of CPRs including by (i) legalisation of encroachments despite protest of villagers against it in some cases, and, (ii) often pre-election period distribution of land in the name of giving the land to landless. In practice 50 to 80 per cent of such privatised CPR land in different states went to the people who already had relatively more land. Consequently, the latter's average size of land holding after getting CPR land increased to 5 to 9.5 hectares per household in different states. The corresponding land holding size for the poor (ex-landless) households ranged between 1 to 1.3 hectares respectively (Jodha 1986,1992).

State (and no. of districts)	No. of study villages	CPR land 1982-84 (ha)	CPRs as % of total village area		% decline in CPR area	
	-		1982-84	1950-52	since 50-52	
Andhra Pradesh (3)	10	827	11	18	42	
Gujarat (3)	15	589	11	19	44	
Karnataka (4)	12	1,165	12	20	40	
Madhya Pradesh (3)	14	1,435	24	41	41	
Maharasthra (3)	13	918	15	22	31	
Rajasthan (3)	11	1,849	16	36	55	
Tamil Nadu (2)	7	412	10	21	50	

 Table 1:
 Extent and Decline of Area of CPR Land in Dry Regions of India

Adapted from : Jodha 1986, where more disaggregated details are reported.

Bio-physical Degradation of CPRs:

In the absence of systematic benchmark information on bio-physical conditions of CPRs in the past, the information on this aspect was collected through reconstruction of oral history and use of some unsystematically kept records. Nevertheless, it revealed some important aspects of bio-physical degradation and hence decline in productivity of CPRs. Table 2 summarises the details. Accordingly, not only availability of products from CPR has declined drastically but the overall extent of "biodiversity in bush" has declined (Jodha 1996). For collecting the same or less amount of CPR products villagers (women) have to spend more time and cover longer distances today as compared to the past.

Indicators of Changed	States (with number of Villages)					
Status and Context for Comparison	Andhra Pradesh (3)	Gujarat (4)	Karnataka (2)	Madhya Pradesh (4)	Maha- rashtra (3)	Rajasthan (4)
CPR - products collected by villagers: ^{b)} • In the past (no.) • At present (no.)	32 9	35 11	40 19	46 22	30 10	27 13
Per hectare number of trees and shrubs in: • Protected CPRs ^{c)} • Unprotected CPRs	476 195	684 103	662 202	882 215	454 77	517 96
Number of watering points (ponds) in grazing CPRs: • In the past • At present	17 4	29 13	20 4	16 3	9 4	48 11
Number of CPR plots where rich vegetation, indicated by their nomenclature, is no more available		12	3	6	4	15
CPR area used for cattle grazing in the past, currently grazed mainly by sheep/goat (ha) ⁴	48	112	95	_	52	175

Table 2:Some Indicators of Physical Degradation of CPRs^{a)}

a) Table adapted from Jodha (1992); based on observation and physical verification of status at the time of field research, compared to the situation in the past (i.e., 1950 as before) or reflected in collected oral and recorded descriptions in different villages. The choice of CPRs where plot based data are reported was guided by available information about them.

b) Includes different types of fruits, flowers, leaves, roots, timber, fuel, fodder, etc., in the villages. The past indicates the period preceding the 1950s. 'Present' indicates the early 1980s.

c) Protected CPRs were the areas (called 'oran') where for religious reasons live trees and shrubs are not cut. The situation of CPR plots (numbering between 2 to 4 in different areas) was compared with other bordering plots of CPRs which were not protected by any religious or other sanctions.

d) Relates to area covered by specific plots, traditionally used for grazing high productivity animals (lactating cows, working bullocks or horses of feudal landlords). Because of the commons' depletion, such as no more grazed there.

Other indicators of environmental resource degradation or decline of biodiversity revealed by Table 2 are: disappearance of a number of trees, and shrubs which existed prior to 1950; non-usability of traditionally high productivity plots for high priority user (e.g., grazing of lactating cows, etc.). A comparison of protected and unprotected plots gives a clear idea of the above changes. Table 2, is quite self explanatory.

Weakened Management System:

Physical degradation of CPRs (and also shrinkage of their area) is paralled by gradual decline in the social arrangements designed for management of CPRs - through regulated use, group action for upkeep and cash and kind investment for development of CPRs. This is indicated by discontinuation or absence of a number of past obligation of CPR users in the present context. Table 3 provides account of such changes.

Number of Villages Pursuing the Following Measures:						
State (with Number of Villages)	Formal/Informal Regu- lations on CPR Use ^b		Formal/Informal Taxes/ Levis on CPR Use ^d		Users' Formal/ Informal Obligation Towards Upkeep of CPR ^e	
	In the Past	At Present	In the Past	At Present	In the Past	At Present
Andhra Pradesh (10)	10	^f	7		8	·
Gujarat (15)	15	2	8		11	2
Karnataka (12)	12	2	9	-	12	3
Madhya Pradesh (14)	14	2	10		14	3
Maharashtra (13)	11	1	6		10	1
Rajasthan (11)	11	1	11		11	2
Tamil Nadu (7)	7	-	4		7	1

Table 3 : Some Indications of Changes in the Management of CPRs^a

a. Table adapted from Jodha (1992).

b. Measures such as regulated/ rotational grazing, seasonal restrictions on use of CPRs, provision of CPR watchmen etc.

c. "Past" stands for the period prior to the 1950s, present stands for the early 1980s.

d. Measures such as grazing taxes, levies, and penalties for violation of regulations on use of CPRs.

e. Measures such as contribution towards desilting of watering points, fencing, trenching, protection of CPRs, etc.

f. (-) indicates nil.

Weakening of the CPR management means weakening of village based, socially sanctioned, customary authority of village elders to manage CPR affairs, non-functioning of consensual rules ensuring contributions for CPR development and penalising the resource abusers etc. The consequent lack of resource for maintenance of CPRs and absence of provisions against their over extraction, have initiated the process of depletion of CPRs.

This represent a situation where decline of 'social capital' as a community asset has led to depletion of physical (CPR) asset of the community. Both are equally invisible to the main stream decision makers.

THE PROCESS OF CPR-DECLINE

Though already alluded to in different contexts, the factors and processes of decline of CPRs are now discussed in more detail. Here we put together the factors which led to decline of CPR in terms of area, physical degradation and management system; relate them to the disintegration of social arrangement evolved and enforced by rural community to protect and manage CPRs; look at these changes as indicators of (qualitative) demographic changes, and finally, sum up the role of different driving forces behind these demographic changes. Table 4 provides field based, quantified, evidence on the impacts of some of the factors involved in the process of decline of CPRs.

(i) Increased Population Pressure:

The lead line of mainstream debate on decline of CPRs, as stated in the beginning is to link the decline of CPR area with the increased population, causing land hunger leading to privatisation of CPRs. While broadly agreeing to the logical formulation of argument and supportive evidence from different areas, it will not be wrong to maintain that population pressure could be necessary but not sufficient condition to accelerate shrinkage of CPR areas. The population pressure works to reduce CPR area provided public policies complement it in curtailing the area of CPRs.

(ii) **Regressive Land Distribution Policies:**

At least the data from our study areas show that: (i) in several cases inspite of higher growth of population decline in the area of CPR was not that high. On the contrary in many villages the decline of CPR area was disproportionately higher than increase in population. Table 4, (section G) shows lesser decline in villages with higher population growth and vice-versa.

Furthermore, in all the 82 studied villages put together, if the proportion of CPR area privatised by deliberate effort of the government through **patta** (land title) distribution, generally around periods of elections, etc. is excluded, the remaining extent of CPR area decline will not be more than 7 to 11 per cent of the total CPR area privatised, against the present figures of 31 to 55 per cent.

·	Changes in Demographic Characteristics	Villages Covered (No.)	Decline in Area of CPRs (%)	
А.	Occupational Change: Proportion of household who newly shifted to agriculture Higher ^{a)}	27	37	
	Lower	21	12	
B.	Degree of Commercialization: Higher ^{b)} Lower	31 28	44 18	
C.	Factionalism, Group Dynamics: Higher ^{e)} Lower	30 26	28 14	
D.	Socioeconomic Differentiation: Higher ^{a)} Lower	28 32	42 15	
E.	Dependence on State Patronage: Higher ^{e)} Lower	25 27	60 16	
F.	Population Growth Highert Lower	21 29	19 45	
G.	Group Action (Social Capital) Higher ^{g)} Lower	20 48	17 46	

Table 4:Decline of CPR Area in the Villages Differentiated by Qualitative Changes in Their
Population (1950-52 to 1982-84)

- a) Table adapted from Jodha (1992). Households that shifted away from traditional caste occupation and became cultivators. Their proportion to total households in the village ranged from 15 to 20 percent and 2 to 5 percent respectively in the villages with "higher" and "lower" occupational shifts.
- b) Accessibility to market and related facilities are used as proxy for commercialization. Better accessibility is broadly defined to include the situation of villages having market center within 2 km of distance, availability of more than five shops in the village, regular operation of town based trader or his agent in the village, year round bus service, etc. On the basis of presence or absence of these attributes villages are grouped as those having a "higher" or "lower" degree of commercialization.
- c) "Higher" factionalism means presence of two or more factions in village with vast differences in their strength and political patronage from the above. Villages with 'lower' factionalism lacked these features. They had factions of equal strength to be able to control each other.
- d) Differentiation reflected by values of Gini-coefficient of owned lands holdings which ranged from 0.63 to 0.75 and 0.34 to 0.40 in the villages with 'higher' and 'lower' socioeconomic differentiation respectively.
- e) Villages which had officially sponsored land (<u>Patta</u>) distribution more than twice during last ten years, had 100 percent dependence on state grant for CPR improvement, are included into 'higher' group. The villages with 'lower' patronage did not have these attributes.
- f) Total increase in village population during 1951-1981. "Higher" means 55 to 68 per cent; while "lower" means 28 to 35 per cent increase.
- g) Group action reflecting 'social capital' means activities including emergency sharing, collective protests to government, negligible extent of litigation, collective charities, maintenance of village assets without government help etc. "Higher" means presence of more than 15 collective practices; "Lower" means five or less practices.

Similarly, if the privatised CPR land given to those already owning land (in place of helping only the landless) is excluded, the decline of CPRs for a genuine help to the landless, would range between 12 to 25 per cent of the current figure of CPR of land distribution. Thirdly, the villages, which, despite political and administrative changes, were able to keep their traditional arrangements intact, and had little relief, subsidy or visits of influential political personalities, showed much smaller (16%) decline of CPRs compared to much higher (60%) corresponding figure in the case of politically patronised villages (Table 4 section E).

The preceding observation also indicates that it is not only the regressive land distribution policy but the disruption of CPR management (including area protection) systems, also contributes to the decline of CPR area, by way of allowing implementation of anti-CPR land policies. As Table 4 (Section G) shows, the villages with their social arrangements (social capital) in tact had only 17 per cent decline in CPR area as compared to 46 per cent in other villages. However, disruption of social capital is again an (unintended) product of reforms policies as elaborated below.

(iii) Introduction Land Reforms:

During early 1950, the Indian states (i.e., areas covered by our studies) introduced the land reforms programme. Besides, abolishing intermediaries (i.e., feudal landlords) between the state and the peasants and giving land titles to the tillers/tenants, the land reforms also postulated provisions of imposing ceiling (limit) on land (holding) size for farmers. They intended to distribute the surplus land, to be made available through land ceiling, to the landless. Having failed in this (Lactejinsky 1972), the governments opted for easier option i.e., to curtail CPR area and distribute it to landless. Though, as indicated earlier most of it went to those who already possessed land. Thus, land distribution policies proved quite regressive in effects. However, the most significant aspect of land reforms programme was reduced, local control of local resources, which in the past helped in evolving and enforcing several CPR management practices. Table 5 provides a more detailed summary of different reform policies and their negative side effects on CPRs and their customary management systems.

(iv) Introduction of Village Panchayats:

Almost a parallel reform measure was introduction of elected village councils (Panchayats), which were made the formal custodians of CPRs as well as other village affairs. In the process, the traditional social arrangement, or customary systems, which embodied "social capital" were disregarded or de-recognised. CPR management - area protection, regulated use and development - became a formal responsibility of village Panchayats. However, the latter being politically oriented bodies with external incentive systems (patronage, etc.) distracting them from the

Table 5: The Impact of Replacing Customary Management with Formal Management of CPRs

Situation Under				
Variables	Customary management (with community involvement)	Formal management (with involvement of state through village Panchayats)		
Control of access and protection of CPR area	Effective prevention of encroachment and curtailment in area	Deliberate encouragement to privatisation, rapid area decline		
Usage regulation	Collective rights/obligations; regu- lations enforced through different devices/social sanctions/physical measures	Common-pool resources as open access resource, little enforcement of regulatory provisions		
Development, productivity promotion	Group action, obligatory/voluntary contributions for resource main- tenance/investment	Periodic activities depending on government grants, little people's participation		
 Miscellaneous items: Group action/collective sharing Autonomy/flexibility Local needs and perceptions Opportunities for grabbing common resources "Free rider" problem 	 functional and high extent of group activities, participatory high degree of flexibility, location, and ethnic group-specificity people's needs/means key guiding factors very little encroachment nonexistent 	 periodical, formal, state-patronised activity, involving local wage labour generalised, uniform patterns imposed from above, insensitive to local conditions perception of outsiders (e.g., gov- ernment agencies) a key element privatisation of common lands encouraged new type of noncontributing beneficiaries on the increase 		
 Practice of "exclusion" CPR productivity regeneration, and biodiversity Resource mobilisation/self-help 	 only outside villagers had no access sufficient regrowth, biodiversity as permitted by the nature participatory activities a key factor in sustainability of common-pool resources 	 on political consideration even local villagers can be prevented reduced regeneration and biodiversity due to depletion and use of narrowly focussed technologies increased external dependence, cost- free use/misuse of common resources 		

Source: Table adapted from Jodha (1996a)

local affairs, could hardly prove a substitute for the customary arrangements. Being majority vote seeking bodies they could neither regulate CPR use (by punishing the misusers) nor prevent enchroachment on CPR lands. On the contrary, for the above reason (i.e., political favour for themselves as well as higher ups) they actively encouraged the privatisation of CPR area (Table 4 Section E). As a final consequence, CPRs in most areas were converted in to open access resources, to be over extracted and encroached upon (see Table 5).

The community lost collective stake and control over the CPRs; culture of group action got replaced by individualistic tendencies; grabbing CPR land as a piece of private property (rather than enhancing and harnessing products of CPRs), became the guiding force. The 'social capital' as mentioned earlier got depleted. The new politically driven and patronage based incentive systems led to disintegration of community's collective stake in CPRs and encouraged factionalism at the village level (Gupta 1987). The villages which could guard against factionalism were able to maintain their CPRs, but others could not. Table 4 (Sections C and D) shows that the villages with high factionalism and higher differentiation also had greater decline of CPRs compared to the others.

Table 5 summarises impact of the above institutional changes on specific aspects of CPR such as the access and protection of area; usage regulation, collective sharing and group action, autonomy and flexibility, concern for local needs and perceptions; control of 'free rider' problem; CPR productivity and regeneration etc.

(v) Market Forces:

The above changes in community arrangements attributed to the replacement of customary arrangement by formal administrative, legal and political arrangements were accentuated by penetration of market forces in these areas. The role of market is not new for studuy areas. But in the past market driven devices did not extend to CPRs. However, with the replacement of local community arrangements by formal top-down interventions; individualisation of people's approach to CPRs; emergence of circumstances favouring conversion of CPR and into private property, "the land-scarcity-land price" links became operative in the CPR context. Increased commerialisation of agriculture following market integration of hitherto relatively isolated dry areas with the mainstream economy, further added to the strengthening of individualistic attitudes, which put very low premium on collective action and CPRs. Table 4 (section B and also A) indicate the impact of these changes on CPRs.

Table 6: Some Public Interventions Affecting Customary Rules and Practices and Their Consequences for CPRs

Interventions involving common- pool resources	Customary rules and practices affected by interventions	Consequences of intervention and formal rules			
Land reforms in the 1950s					
 Undeclared policy of privati- sation of common resources. Distribution of common lands for private cultivation. Government acquisition of common land for public purposes. Legalisation of illegal encroach- ments. 	 Erosion of social sanctions and community authority to protect common resources, regulate their use, and develop them. Legal status to common-pool resources without effective enforcement mechanism due to loss of customary communal arrangement, loss of community stake in resources. 	 Decline of common-pool resource area, overcrowding, over- exploitation, and physical degradation. Village Panchayats failed to ensure people's participation for common- resource management. Common-pool resources became open access resources. 			
Introduction of Panchayat system	and other measures for commo	n-pool resources			
 Provision of village Panchayats (elected councils) as custodians of common-pool resources. Government grants and subsidies to manage and develop community lands. External, formal, administrative, and legal measures extended to village affairs. 	 Replacement of traditional decision makers (e.g., village elders' group) by Panchayats Cessation of participatory management, local resource mobilisation, and group action for common resources. Authority and knowledge of local community ignored. Failure to implement legal provisions for common resources. 	 Few village level initiatives for common-pool resources. Default on the part of Panchayats; diversion of CPR-grants to other uses. Common-pool resources became open access resources with expected degradation and depletion. Common-pool resources became legal entities instead of a collective asset, with no effective mechanisms to put legal provisions into practice. 			
Formal production and resource upgrading programs					
 Research and technology application on pilot scale. Pasture, social forestry, and watershed development projects. Projects conceived from outside, sustained by government subsidy, characterised by "technique dominance". 	 Disregard of local knowledge and institutional factors, user needs, and perceptions. Marginalisation of partici- patory approach, local resource mobilisation, and collective action. Alienation of community from its resources, loss of community stake in resources. 	 Area decline due to the acquisition of common lands for pilot projects. Reduced access to common-pool resource users. Common-pool resource development as part of development projects decided by state agencies, no local stakes. 			

Source: Table adapted from Jodha (1996a)

(vi) Side Effects of Other Development:

The other developments (e.g., top down interventions) associated with economic transformation of hitherto subsistance oriented backward areas, and the tendencies they promoted were also not favourable to traditional social arrangements. The disregard of traditional knowledge systems, traditional forms of group action, collective sharing and sensitivity to the problems of local natural resource base etc. complemented the role of market forces. Concerned with the need for enhancing productivity of community natural resources, under the development plans, the states undertook several initiatives to upgrade and conserve CPRs. But all the efforts treated CPR units as pieces of land without CPR perspective (i.e., involving community participation and ownership). They focussed on fiscal support (subsidy) and technologies (e.g., for afforestation, soil conservation, pasture reseeding etc.), without little recognition of local perceptions and traditional knowledge systems. Hence, they had little impact beyond the "pilot project areas". Table 6, summarises some details on the public interventions and their impacts on CPRs and their management.

Besides, a few other public policies and programmes directed to enhance agricultural development in dry areas adversely affected the CPR. For instance, to meet the 'land reclamation' targets, development officials also encouraged conversion of fragile CPR area in to crop land by removing natural vegetation. The "grow more food campaigns" also followed the same approach in many areas. The government loans and subsidies promoted tracterisation, which facilitated extension of cultivation to fragile CPR lands at very low cost (Jodha 1992,1996).

BELITTLING THE REFORMS? SEARCHING FOR A WAY OUT:

The point in enumerating the negative impact or rather side-effects of formal reforms, market integration, and the top down development intervention etc. is not to minimise their positive gains. Instead, our objective is to highlight their insensitivity to CPR issues and the significant changes they brought about in the attitudes, and approaches of rural communities, which represent a less recognised but major qualitative aspect of changes in rural areas. Also our purpose is to identify major underlying driving forces, which are more numerous as well as more effective than the simple increase in the number of people to accelerate degradation of community level environmental resources. The recognition and understanding of the above phenomena may serve as an important step towards rehabilitation of CPRs as well as rebuilding of 'social capital'.

Though it falls outside the scope of the present paper, still we can venture on indicating possible approaches to address the above consequences and processes of demographic changes. To facilitate this it will be useful to have a look at how the rural population individually or as a group has responded (adjusted) to the above changes. Accordingly, the net consequence of degradation of CPRs and depletion of social capital (which at this stage seem to reinforce each other) is reflected through the situation summarised under Table

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7. The Table presents the dominant features of community approach and behaviour in the context of depleted state of CPRs. Since, the rural community is more differentiated and has individualised its approaches to CPRs, the adjustments of rich and poor people to the CPR changes show considerable differences, through the key circumstances underlying their responses are broadly common. For instance the decline of social arrangements to manage CPRs induces rich (and poor too) to grab CPR land; it also encourages the poor to over extract the resources without obligation or incurring private cost in the process.

Similarly, the public policies, while legalising encroachments on CPR lands with minimal penalties, and creating patronage or subsidy based incentives, induce both rich and poor (though in different degrees) to privatise CPRs with no fear and cost.

Measures adopted by Different Groups in the Face of Decline in Area, Productivity and Management

Systems of CPRs				
Rural Rich	Rural Poor	Rural Community (General)		
Withdrawal from CPRs as users of products: (opportunity cost of labour higher than CPR product value)	Using of CPRs as an important source of sustenance Complementarity of CPR- cropland based activities	Acceptance of CPRs as open access resources: no collective efforts to enforce users' obligations, regulations		
 Increased reliance on alternative options Own bio-mass supplies; (stall feeding, etc.) Non-renewable/external resources (e.g., replacing stone fencing for thorn fencing, wooden tires for carts, iron tools for local wooden ones) 	 Acceptance of interior options Opportunity cost of labour lower than value of products of degraded CPRs No other private cost of resource use 	 Selective approach to specific CPR units: despite general neglect of CPRs, concern for some productive units Limited exceptions where collective arrangements still survive 		
 Private squeeze on CPRs as assets Grabbing CPR lands Preventing others using seasonal CPRs (private crop lands during off-season) 	 Measures reflecting desperation Premature harvesting of CPR products Removal of roots/base of products Over-crowding and over-exploitation of CPRs Use of hitherto unusable inferior products 	 Focus on "other" uses of CPRs: Item in seeking government subsidy/relief, in running factional quarrels, in populist programmes, etc. Community only responds to external directions does not plan own activities 		
 Approach to CPR management Indifference to decline of CPRs Act as influential local party to non-functioning legal and administrative superstructure for community resources 	 No capacity to organise users Extraction without obligation 	Party to non-operating legal and administrative measures: acceptance of external imposi- tions without protest, etc. Loss of "social capital" ability to act jointly		

 Table 7: _____
 People's Adaptations to Changing Situation of CPRs

Source: Table adapted from Jodha (1992)

The loss of 'social capital' at the community level is single most important factor promoting individualised behaviour vis a vis community resources in the case of both rich and poor. Finally, since community has no control over local resources they are on the receiving end and simply respond to the top-down interventions, designed for community lands, (be it social forestry or rehabilitation of degraded pastures), without owning them.

Under the circumstances briefly indicated by Table 7, rehabilitation and sustainable use of CPR and rebuilding of social capital, are quite difficult tasks, especially when the policy environment and the present process of economic transformation are not congenial for them.

However, if CPRs due to their ecological and economic functions need rehabilitation; and social capital rebuilding is considered essential not only to help CPRs but also to facilitate success of other grass roots level development interventions, the situation depicted by this paper requires change.

In this context building of a collective stake in community resources is a first step. The practical approach to do this would involve promotion of user groups of CPRs' as attempted by several NGOs in different areas (Proffenberger et.al. 1996). However, to accommodate diverse interests of economically differentiated rural communities, the CPR re-development will have to have strong focus on diversification of products and services and equitable distribution of gains using appropriate methods including some form of share holding system, as tried in watershed development and pasture development projects in India (Mishra and Sarin 1987).

Besides, the above initiatives require strong policy support in terms of legal framework to encourage user groups; transfer of control of local resources to local communities and provision for investment in CPRs, which are presently so depleted that no community would be able to rehabilitate them on their own (Jodha 1992).

However, despite need for user group based collective action as well as policy and funding support from the state, the divided local communities may not have capacity to respond to new opportunities and take up new responsibilities. Hence, a need for catalytic role of NGOs and other volunteer agencies to mobilise rural communities and help in their capacity building to undertake new responsibilities (Proffenberger et al. 1996). The information presented in this paper hopefully may help the community mobilisers to understand the process by which rural communities were disempowered and their collective stakes in natural resources were disintegrated. This in turn can help evolve the strategies to change the situation. A few NGOs in India, have already in corporated such insights in their work plans.

References

- Bromley, D. W. And Cernea, M. M., 1989. The Management of Common Property Natural Resources: Some Conceptual and Operational Fallacies. World Bank Discussion Paper, No. 57. Washington, D.C.: The World Bank.
- Gupta, A. K. 1987. Why Poor People do not Cooperate? A Study of Traditional Forms of Cooperation with Implications for Modern Organisations. (In) Politics and Practices of Social Research (ed) G. C. Wanger. London: George Allen and Unwin.
- Jodha, N. S. 1986. Common Property resources and Rural Poor in Dry Regions of India. Bombay: Economic and Political Weekly, 21 (27).
- Jodha, N. S. 1992. Rural Common Property Resources: A Missing Dimension of Development Strategies. World Bank: Discussion Paper No. 169. Washington D.C.: The World Bank.
- Jodha, N. S. 1995. Common Property Resources and the Environmental Context. Role of Biophysical versus Social Stresses. Bombay: Economic and Political Weekly, 30(51).
- Jodha, N. S. 1996a. **Property Rights and Development** (in) Right to Nature: Ecological, Economic, Cultural and Political Principles of Institutions for the Environment (eds.) S. S. Hanna, C. Folke, K-G Maler. Washington D. C: Island Press.
- Jodha, N. S. 1996b. Social Dimension of Biodiversity Management in Agricultural Land Scapes. ENVSP, Environment Department, Washington, D.C.: The World Bank (Limited Circulation).
- Ladejinsky, W. 1972. Land Ceiling and Land Reforms. Bombay: Economic and Political Weekly 7(5-7).
- McNicoll, G. And Cain, M. (eds) 1990. Rural Development and population: Institutions and Policy. New York: Oxford University Press.
- Mishra, P. R. And Sarin, M. 1987. Sukhomajri Nada: A New Model of Eco-Development. Bombay: Business India, November 16-29.
- Ostrom, E., D. Feeny and Picht, H. (eds) 1988. **Rethingking Institutional Analysis and Development.** USA: International Centre for Economic Growth, Institute for Contemporary Studies.
- Proffenberger, M., McGean, M.B., and Khare, A. (eds) 1996. Village Voices, Forest Choices: Pioneering India's Forest Management in 21st Century. New Delhi: Oxford University Press.