

Common Mistakes about Common Property

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ABSTRACT

Against the doomsday prediction of Hardin, the early analyses of CPR (a) brought to fore numerous cases of sustainable use of resources by communities and (b) addressed the question of incentives for collective action. The case study materials were then used to formulate design principles. Collective action theories developed using two distinct approaches (i) moral economy' approach and (ii) formal models of rationality of co-operation. These are the major theoretical tools available for CPR studies. Unfortunately, the counterexamples were overwhelmingly examples of small, more or less, undifferentiated communities in the peripheries of markets. The moral economy theories in general, were developed to explain somewhat similar situations. Formal models of rationality like game theory find it convenient to explain cooperation in small, secluded groups of identical (undifferentiated) players in a static setting. This kind of images of common property keeps on recurring in CPR studies.

This is in spite of the fact that by now, descriptions in contrast to such images have been investigated at length by several scholars. The possible scale of CPR has touched global height. The observed effects of market intervention are not unidirectional. There are cases where internal cooperation has been facilitated by market forces. Nor are the communities egalitarian, as numerous case studies show against the popular notions. Transitions to different collective action regime and to higher levels are subjects of many studies. While CPR scholars, on the one hand, are investigating these complex relations, on the other hand a very large section of CPR studies still keep on repeating one or the other of the simple-minded CPR images. The narrow and improper image of CPR has serious consequences for development policies. Development officials in developing countries, who are usually far less informed about advanced research topics, are guided by such simple images and find support in the CPR studies propagating those images. In developing countries CPR policies are made only for management by small communities, and that too for 'preservation' not 'development'. Increasing differentiation and market extension is viewed with suspicion.

Research on the complex relations is the theme of this conference. Simultaneous efforts should be made for curtailing the inappropriate simple images that are still proliferating. This paper summarizes the existing literature on the complexity of relations. But its major focus is not to make another contribution in understanding one of these complexities but to bring out from the survey of literature, the common mistakes about common property, which should be avoided by all. Towards this end the present article focuses on showing the deadweight of simple but inappropriate images of CPR in literature on CPR policies.

Finally, an alternative analytical approach that may accommodate the complexities, but has not received much attention in CPR studies, will be discussed. The New Institutional Economic (NIE) literature, that admits hierarchies, organizations and different forms of property along with markets, may have something to offer. However, this is only an appeal for exploration, not a recommendation.

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The Common Mistakes

It is not quite common to find the best known contender being complimented in a major professional event. At the IASCP meeting however, Acheson (2000) began his Keynote Address by paying tribute to Garret Hardin for proposing “management of resources is basically an institutional problem”. This is the basic approach of CPR¹ studies. Indeed, Hardin’s succinct observation in the pages of *Science* magazine had a cutting-edge: “An implicit and almost universal assumption of discussions published in professional and semipopular scientific journals is that the problem under discussion has a technical solution” - a solution demanding little or nothing in the way of change in human values or ideas of morality. He proposed that there are problems that have no technical solutions. Hardin’s naïve conclusion initiated a series of studies contesting his position, which has come to be known as studies of common property. Nevertheless, these are studies of resource management as an institutional problem as against lopsided emphasis on technical solutions. After three decades of work, today we have a rich body of literature and programs that convincingly rejects Hardin’s view. But in turn, this literature has produced another set of unsupported positions, regarding market, equity, scale and development. These are what I call common mistakes about common property, with adverse influences on policy debates as serious as that of the ‘tragedy of commons’.

Against the doomsday prediction of Hardin, the early analyses of CPR (a) brought to fore numerous cases of sustainable use of resources by communities and (b) addressed the question of incentives for collective action. The case study materials were then used to formulate design principles (Ostrom, 1990; Bromley et. al., 1992). Collective action theories developed using two distinct approaches (Mosse, 2003): (i) moral economy’ approach and (ii) formal models of rationality of co-operation. In brief, these are the major branches of theoretical works on CPR as available. Unfortunately, each of these streams was constrained by some deadweight. The counterexamples

¹ For the purpose of this article there is no need to bring in the conceptual distinction between common pool and common property resources. To avoid digression I have used CPR everywhere, which may be the acronym for both.

were overwhelmingly examples of small, more or less, undifferentiated communities in the peripheries of markets. Historically, the moral economy theories were developed to explain situations of local communities not deeply influenced by markets. Formal models of rationality like game theory find it convenient to explain cooperation in small, secluded groups of identical (undifferentiated) players in a static setting. This kind of images of common property keeps on recurring in CPR literature in spite of the fact that by now, descriptions in contrast to such images have been investigated at length by several scholars. In turn, CPR policies are made only for management by small communities, and that too primarily for ‘conservation’ not ‘development’. Increasing differentiation and market extension is viewed with suspicion.

In a way, there is a clear division of niche, between primarily technical approaches to natural resource management and CPR approaches. It is the small, more or less, undifferentiated communities in the peripheries of markets, still loaded with pristine moral and habitual trust, which is the policy space earmarked for participatory activities or community based natural resource management (CBNRM). These societies are of little interest to modern technology and to technocrats. Hardin’s scathing criticism and subsequent rich research could unsettle the proponents of technical solutions to permit only a small space for institutional solution. Unfortunately, a great many CPR scholars have complacently accepted the division. There are exceptions, even admonitions from reputed CPR scholars. But a very large body of CPR studies still keeps on repeating one or the other of the simple-minded CPR images. Development officials in developing countries, who are usually far less informed about advanced research topics, are guided by such simple images. Today, this is a serious problem that restrains CPR research to realize its full potential. In the following sections of this paper I will summarize some the evidences that we have, against these common beliefs. In the concluding section I will draw attention to an emerging approach in CPR studies, relocating it in institutional theories that may support the balanced position.

Scale

Following Mancur Olson’s pathbreaking work (Olson, 1971) the question of scale in collective action problems started receiving due attention. Olson argued that collective action becomes more difficult as the group to be mobilized becomes larger; but small groups have certain advantages in overcoming problems of cooperation. Olson went to the extent of calling the small

groups “privileged” from this angle. Ever since this influential writing formal investigation of collective action problems have remained restricted to small groups. Responding to the question as to what factors are more conducive to successful collective actions Balland and Platteau (1999: 773) opines, “Probably the most salient conclusion which emerges from these works, including the works of economic theorists, concerns the crucial role of group size: the smaller the group the stronger its ability to perform collectively.”

The questions at stake are better understood when read within the right perspective. Olson conducted his research in an altogether different context. The ruling idea at that time was that common interests lead to group organization and collective action. Scholars could not perceive how, in spite of self-interests, people may not organize themselves in groups. Olson’s pathbreaking contribution was to show that this was not a trivial issue, opening up a new area of investigation: when and why collective action is possible. Extolling the virtues of small group was not Olson’s agenda. He was drawn to small groups because they have certain advantages: (a) persuasion is possible in small groups, (b) higher chance of an individual having pivotal importance and (c) small groups often engage in repeat play. These advantages may not be restricted to small groups of individuals. Ostrom pointed out that the empirical support for Olson’s proposition comes more from studies of global commons (Ostrom, 2002; Keohane and Ostrom, 1995).

Occurrence of CPR at global dimension is an accepted position. The domain of theories at this level is increasing day by day. The UNDP study (Kaul, Grunberg and Stern, 1999) classifies Global Public Goods into two types -- *commons* and *conditions*. The commons, the editors argue, consist of both natural (atmosphere and bio-diversity) and human-made (knowledge and the Internet) stocks. A pertinent question is that public goods are not subtractable and excludable. However, Stiglitz notes in his contribution to the volume that protections like patents etc. turns pure public goods impure, with characteristic features comparable to CPR.

On the whole, existence of commons at both small communities and global levels are recognized and well researched. The grey area is the numerous scales between small communities and global commons. The territorial size of CPRs varies widely, from small irrigation groups managing small territories to communities managing large territories as CPR for community based wildlife management. In Bardhan’s sample of 48 irrigation communities (Bardhan, 2000) the number

of households using a particular irrigation system varies from 11 to 279. To the best of my knowledge no one has made a comparison of the membership strength of some of the numerous CPR case studies that we have. Comparing two studies, one by Libecap (1995) and the other by Blomquist (1992), Ostrom (2002) noted that in one, agreements to oil unitization with groups greater than four was difficult, while the other was a case of agreeing to common rules to allocate rights to withdraw water from groundwater basins involving 750 participants.

The question of size is not one of mere comparative theoretical interest. It has serious policy implication. What is the optimum size for meeting a specific goal (e.g. efficiency) of CPR management? I cannot resist the temptation of repeating the crisp title of an article by Agrawal (2000): “Small is beautiful, but is larger better?” Agrawal shows that communal forestry institutions in India that are moderate in size are more likely to reduce overharvesting than the smaller groups, because the former tend to utilize a higher level of guarding than smaller groups.

Ostrom (1990: 90) introduced another possibility of large scale cooperation. One of her design principles is nesting of enterprise - organization in multiple layers. If cooperation is the ‘privilege’ of small groups, representatives of small field level groups may constitute small groups at upper levels, cooperating for larger CPR. In irrigation systems this is quite common. Numerous studies report that field level channels (tertiary) or outlets are governed by the beneficiaries of those. They represent to form federal bodies governing the whole of a distributary that feed these channels. The distributary level association may also federate into still higher levels. Alpine systems in Switzerland and Italy have been nested in a series of self-governing communities that respectively governed villages, valleys, and federations of valleys. Cases are in plenty. But nested enterprise is neither an image of commons that is in vogue nor is it a commonly used aspect of CPR policies and programs.

Market

Population growth, state intervention and market penetration are the three major reasons cited for the decay of CPR all over the world. Many of the pioneering works (e.g. Jodha, 1985) show the role of market forces in the decay. There are numerous other examples. However, the question is far more complex. If these evidences establish that market forces signal the end of CPR then CPR research is of historical interest. The crucial issue is whether CPR can also exist within markets and

other institutional structures just as firms do, whether commons are relics of past social systems or are constituent of capitalist system itself. “Before the advent of capitalism CP was widespread. Its incidence reduced after the advent of capitalism. In more recent periods there is a trend towards revitalizing it through programs of joint forest management, irrigation association etc. There is also limited success showing its vitality. Are these futile efforts to turn back the passage of time or there is some room to maneuver?” (Sengupta, 1995: 196).

The series of evidences showing adverse market influence must be read with some care. As McKean (2000) put it –

Historically, many robust systems of collective management began to falter as commercial demand for the products of the commons increased, though we do not know for sure if the responsible factor here was demand per se that was a problem, or changing property rights arrangements that threatened the security of communal tenure, or still some other problem.

On the other side, we must not overlook the fact that CPR activities like fishery and certain kinds of forest product gathering, have traditionally been based on market exchanges (Sengupta, 1995: 196). McKean (2000) noted that some CPRs exist only because of commercial activities. She cited the examples of Chiclé latex extraction from the Maya biosphere reserve which is used for chewing gum; birds’ nests collection in Kalimantan, for use in Chinese cooking; and gum acacia collection in Senegal. These are not worth extracting at all except for peculiar customers who pay cash.

Organizations are required because market exchanges are not able to assist all transactions. All economic organizations arise essentially, because of market failure. Existence of CPR organizations too are linked to market failure. But this may not mean that they would exist only in the absence of market forces. New Institutional Economics talk of market failure in a limited sense (viz. Furubotn and Richter, 1997: 62-64), described by attenuation of transaction costs in some transactions, by substituting internal organization for market exchange. Organizations like firms exist within markets because they reduce transaction costs for certain transactions compared to the costs for conducting the same transactions as market exchanges. CPR too may exist within market,

and may even multiply like firms and other forms of organization, benefiting from the development of economic activities brought out by markets. Market penetration definitely weakens pre-existing CPR, as numerous studies show. But this kind of evidence would not exclude the possibility of market extension parallelly making room for new CPR. The examples cited by McKean (2000) are cases of CPR formations due to market extension. In fact, current interest in CPR is located in the context of globalization and market extension, and the CPR development efforts may be seen as efforts to develop organizational forms for transactions where there are limited market failures. That they resemble traditional CPR may not be enough of a reason to perceive the new CPRs as continuation of the traditional ones.

Another line of argument is by Sengupta (1995) and Antinori (2000). Both of them note the similarities between CPR and labor-managed firm or producers' cooperatives, which are of moderate interest in economic literature. "Paucity in numbers aside", Bonin et. al. (1993: 1317) noted in their survey article, they "exist and sometimes even thrive in market economies. ... Although PCs (producers' cooperatives) are no panacea, evidence exists to suggest that worker participation does have a role to play in industrial mixed market economies." Common pool resources may be the most fertile basis for labor-managed firms. Also, the failure to identify one of its major incidences may be the reason why producers' cooperatives or labor-managed firms appear to be so few in an economy.

Equity

Field studies of CPR management have repeatedly shown that inequality is harmful for collective action. Several other studies have shown that collective action is possible in spite of that. While summarizing case study materials from Taiwan, Mexico, Sri Lanka and Egypt Hunt (1992) had found considerable amounts of inequality present within the groups. From case studies conducted over six village forest institutions in Rajasthan in India, Jain (2002) finds that heterogeneous groups have sustained collective action without eliminating inequalities. Olson hypothesized that inequality might favor the provision of a public good. Lately, Baland and Platteau (1999) as well as Dayton-Johnson and Bardhan (2002) have developed a set of understanding that may reconcile the conflicting evidence. Dayton-Johnson and Bardhan (2002) find that the relationship between inequality and economic efficiency in CPR is not linear but U-shaped. Baland and Platteau (1999) find that in situations where agents freely interact without any intervention by a

regulatory authority there is nothing like a one-to-one relationship between inequality and collective action. But in regulated settings, inequality tends to reduce the acceptability of available regulatory schemes making collective action more difficult.

Evidently, this is an issue where great strides have been made by recent research. But that is yet to make much dent on the populist beliefs. The popular understanding of the equity issue in CPR is rooted in the popular meaning of the term ‘community’. The social theories of community evolved in the nineteenth century, as an idealist construct against the growing ‘menace’ of industrialization. Communities were perceived as unspoilt, homogenous groups of people, defined over small territories and sharing common norms. To this date, “the feature of community receiving the greatest attention in its construction as a social artifact is its homogeneous composition. ... Homogeneity is assumed to further cooperative solutions, .. promote better resource management. Outside the community conflicts prevail; within, harmony reigns.” (Agrawal and Gibson, 1999: 634). CPR scholars have not defined community. In popular perception, community management is an emotional issue, an argument for providing opportunities to the marginalized groups. Even scholars, activists and policy makers are not without this emotion (Jain, 2002).

Most studies address the question of equity within CPR. In his Presidential Address at the IASCP conference on "Inequality and the Commons" Netting (1992) drew attention to another dimension of the equity issue, between the CPR and the rest. It is not the returns from the institutionalized commons, Netting argued, which are allocated in equivalent amounts among community members. Instead, equity resides in the constitution and governance of common property, which typically exclude non-members, limit use by members, and give all members an equal voice in rule making and monitoring. The passing of the commons constrains mobility and decisively increases the changes of permanent rural inequality. This is a profound argument. But as yet, we have little information whether CPR sector is more equitable than other comparable sectors of the economy. Once again, there is widespread belief that this is so, though little to substantiate.

Both theoretical and empirical studies establish that collective action is possible in spite of inequality. The policy question is- What does a policy maker recommend when there is considerable internal inequality in a CPR? One possible recommendation is when the group is heterogeneous and it is difficult to enforce equity, the group must be left alone to sustain collective action (Jain, 2002).

The other is to address the equity issue first even at the cost of good management. Netting's line of argument would reject the second option as unwarranted. But the conjecture behind his argument (Netting, 1992) may not be valid. In my studies of several CPRs in India and Philippines (Sengupta, 1991), I found that the internal compositions of CPRs were sometimes, more iniquitous than the local economy at large. The most powerful farmers, some of whom behaved like 'tyrant feudal lords', had got hold of the better part of the benefits. The communities still functioned when the poor had little alternatives. But this was a vicious circle - community management further empowered the powerful. I feel that the appropriate policy recommendation here would be, "Even if it is endowed with good management a customary system of distribution may still warrant change in changed social environment" (Sengupta, 1991: 32).

Development

"The commons literature is full of examples of destructive state intervention. ... However, the literature also contains many examples in which the state has created enabling legislation or has otherwise facilitated the development of local-level institutions" (Berkes, 2000). Berkes made a list of the diverse forms of institutions for positive effect of linkage between higher level and local institutions. One of the six categories is: institutions oriented for development, empowerment and co-management. Most CPR programs are conceived as programs linking conservation and development. But rarely is there any well-designed course charted out for the development objective. By their own steam some of the CPR organizations evolve and reach higher stages of development. Those are rarely studied. In brief, theories or policies of CPR rarely reflect any systematic development program.

What actually is happening in the development front? In their study of CBNRM in Zambia Wainwright and Wehrmeyer (1998) show that the conservation and development goals are in conflict. In a social cost-benefit analysis Kumar (2002) concludes that the poor are net losers over a 40-year time horizon in the Joint Forest Management regime of India. An author appreciative of the strategic advocacy aspect of CBNRM, Tania Li (2002) nevertheless feels that the CBNRM program in Southeast Asia would in all probability, end up reassigning poor people to a marginal economic niche that corresponds poorly to the future they imagine for themselves.

Such examples need not be read always as complete failure of CPR programs. In many cases one or the other of the six positive effects listed by Berkes (2000) may be met. My contention is that quite often development is not among the objectives successfully met, although invariably it is one of the declared objectives. Clarity on this complex issue will help us design better CPR programs that would actually meet this almost always declared objective.

Very few studies assessed performances with respect to the development objective. Some of these, like the ones cited earlier, reached negative result. But there are a few that show success even in this front. Chopra and Dasgupta (2002) find that in some pockets, CPR programs have emerged as development drivers although their role as the safety net dominates everywhere. Anderson et. al. (2002) find the linkage acting from the other side. They note, while targeting income and production enhancing activities, microcredit programs release pressure on local CPR, and build up favorable physical and social capital, thus having significant positive impact on conservation of local common pool resources.

This set of studies show that success works through the linkage between CPR and other activities of the CPR members. There is another set that shows development of the CPR itself. Antinori (2000) conducted a rare study of CPR response to larger market opportunities. In 1986, Mexican laws granted legal rights allowing communities to exploit their own timber resources. For the first time, the CPR communities were faced with the option of integrating forward into timber production activities apart from the earlier provision of transacting through the marketplace for selling timber resources. Antinori analyzed the collective action decision of 42 communities in Oaxaca. She found that several of these forestry communities had made spectacular evolution from receiving only a stumpage fee dictated to them, to productive organizations of roundwood, lumber or finished wood products.

Empowerment, a subject paid more attention, is only a precondition for development. Antinori's research is one of the handful of CPR works that studied the consequences of empowerment. Every single CPR program aspires this kind of transition and is at the same time, terrified of this actually happening. Development is desirable, and feasible. But is it feasible along with perpetuation of CPR? Progress and development that may endanger the small scale existence of

communities, increase inequality, and link them up with markets seem to be perils not prospects. While rescuing CPR vision from Hardinian tragedy have we condemned it to stagnancy?

Our theories too are directed to promote the stationery image. The design principles, being based on a conjecture that institutions are long-enduring, perpetrate stagnancy as a virtue. Game theory approach is directed to find equilibrium. Once reached, that would require no further improvement.

I do not argue that CPRs will remain in tact in spite of development. There are numerous possible courses of development which would not allow CPRs to continue. But there may be some approaches to development where CPRs are integral. My submission is that we are not making much effort to identify these complimentary courses. Besides, there is another question. CPR conservation is not an end in itself. It is an approach to meet postulated goals like natural resource conservation. There are other ways to meet the ultimate objectives. The CPR approach found favor only because of its merit. But long term viability of an approach that necessitates communities to remain static for indefinitely long period, rejecting development aspirations of the members (viz. Li, 2002) is in question. The proponents of CPR strategy have no other option but to chart out the compatible courses of development, even if it leads to dissipation of CPR.

If there is a feasible course of development with conservation of natural resources and perpetuation of community it is obscure. At Oaxaca Antinori (2000) observed that after significant success, “Community members themselves grapple with how to maintain competitiveness in the marketplace and maintain community structure”. This dilemma will be ever-present in any developmental recommendation. The only statement that I can make with definiteness is that the evolutionary courses of some CPR institutions show us that the two can be reconciled. I will end this section by citing one case of development of CPR over more than a century.

Among the examples of enabling legislations listed in his article, Berkes (2000) cites the locally managed network of *kuhl* irrigation in Himachal Pradesh, northwest India. This is one of the several indigenous irrigation systems that were recognized by the British colonial administration in the mid-1800s for reasons that I have described elsewhere (Sengupta, 1991: 55-60; 2001: 107-113). The type of legislations varied from region to region. In some regions state intervention was

inappropriate and destructive, in some others, a little better. There were also several regions, eastern India in particular, where the communities received recognition only indirectly, when the colonial authorities settled revenue system with local intermediaries. The intermediaries (*zamindars*) were familiar with local customs and accustomed to extend recognitions to the local communities. In effect, the communities here were empowered by the colonial rule in the best possible manner; they received recognition but escaped undue intervention. For quite some time, they performed the best, so much so that the region (some parts of eastern India) served by the communally managed irrigation system, was immune to famines at a time when the rest of the colonial India was repeatedly visited by droughts and famines (Sengupta, 2001: 113-115).

To the protagonists of CPR program the last category of support measures would seem to be ideal. The story however, is a little more complicated. The intermediaries of eastern India did not undertake much of developmental work. But the colonial government did that in the areas (southern India) they recognized indigenous irrigation systems and modified customary rights in due process. Although at the initial stage there was quite some decay, ultimately the local communities and the broad polity adapted to each other. In due course, some of the CPRs made great strides. To cut the story short I describe here, the best of these, the Tamirabarani irrigation system. Beginning since mid-nineteenth century, modern technology enabled construction of structures in areas where it could not be built earlier, adding some more feeder canals and tanks to the river system (for details see Sengupta, 1991: 121-151). In the twentieth century massive reservoirs were constructed to stabilize the supply. Finally, a few decades back, two hydropower stations have been added making it a multipurpose project. Today the Tamirabarani river irrigation system consists of 179 tanks irrigating 19 thousand hectares, 282 km of canals irrigating nearly 16 thousand hectares, 3 large reservoirs and 2 hydel power stations showing the immense potential of bottom-up approach of development. At the same time, about a hundred of community organizations around the irrigation system are strong (for details see Sengupta, 1991: 121-151). The best of those has celebrated its hundred years in style. Instead of withering away before the onslaught of this developmental impetus they have become stronger than ever. Institutions evolve. Endurance is in continuity, not in the state of frozen existence.

Conclusion

It may not be far from the truth to say that several decades of CPR research have not succeeded in making a decisive break from the primarily technical approach to problem solving, to which Hardin had directed his criticism. Only a limited policy space, a narrow sphere that is of little interest to it, could be wrestled out from technocratic approach. In spite of several valuable scholarship exploring wider dimensions, a very significant part of CPR policies has remained content with studies of small, more or less, undifferentiated communities in the peripheries of markets. Although development is usually one of the declared objectives, there is no comprehension as yet, about viable path or paths. Conservation goal is equated to preservation of traditional values and ideas of morality. Additionally, the literature has somehow, lent support to the popular images of equitable, homogeneous, inward-looking, sustainable communities, all of which appear to be counterfactual from closer scrutiny.

In sharp contrast to this popular and policy makers' image of CPR, the analytical literature is rich. There are analyses that locate CPR at global scale, conceptualize the complexity of equity issue, identify CPR activities promoted by market forces or single out possible avenues of development. Yet, they fail to alter the popular image. The reason, I feel, is the lack of a comprehensive understanding of CPR. Quite often, an excellent analytical work makes an insightful criticism of one of the popular myths while falling victim to another. As I have indicated, the major theoretical approaches used in CPR studies suffer from certain deadweights. What we need is an alternative theory of CPR that would accommodate the observed complexity.

What kind of theory would accommodate all available facts? It should be a theory that includes collective action, permits development and is compatible with market extension. This is not difficult to attain if the theory CPR is located within the general institutional framework. Several scholars have felt that New Institutional Economics (NIE) may provide for such a framework. The following are some of the merits of using this framework:

1. The basic explanation would be that a common property arrangement may attenuate transaction costs in certain transactions, as against private property arrangement with market exchange. Indeed, the design principles can actually be included in the notion of transaction costs. If CPR-institutions operate properly, they in fact reduce these costs (Haller, 2002).

2. The case of CPR would arise because of market failure in a limited sense. The CPR programs are efforts to develop organizational forms for transactions where there are limited market failures. It would not imply that market extension in general would signal the end of CPR.
3. Development is a possibility allowed in NIE based explanation.
4. The issue of transaction cost efficiency would determine appropriate scale of CPR. In fact Olson's arguments in favor of small groups, pertain to transaction cost efficiency. By looking at the reasons one may find that collective action phenomenon need not be restricted to small groups of users. Groups in many different situations may meet these conditions. As already indicated, Ostrom had noted that global commons meet these conditions.
5. Equity issue has not been addressed much in NIE literature, which indeed, is a positive point. NIE approach explains occurrence of institutions without needing an equitable setting. This may relieve the community based theories of CPR, which tend to associate collective action with equity.

Use of NIE framework would also open up the question of transition of CPR. Collective action is not an end in itself. It is an approach to meet postulated goals like natural resource conservation. There are other ways to meet the ultimate objectives, and in different circumstances one of those may appear better than CPR approach. Acheson (2000) issued a timely warning:

There is a tendency for social scientists and others to lionize one of these and argue that the solution to resource management problems is this particular one. I would argue none of these is a general solution. All of the institutions - private property, government, communal management and markets, will fail to solve resource conservation problems under certain conditions. This is not to say that none of them work. But one of the key questions facing resource management at present is: Under what conditions will each of these different kinds of institutions work? When will they fail?

Several CPR studies refer to NIE, and NIE studies touch upon CPR. But a well-developed NIE framework for CPR is not yet available. CPR is primarily meant to address environmental problem of developing countries. NIE scholars do not seem to be too willing to address the problems of either the developing world (Shirley, 1997) or environmental governance (Paavola and Adger, 2003). The CPR scholars, on the other hand, show a tendency to use NIE framework in passing or only as supplementary sections. Considering the potential, now it is imperative to try NIE approach for developing a full-fledged theory of CPR.

References cited:

- Acheson, James. 2000: "Varieties of Institutional Failure", Keynote Address for the Meetings of the International Association for the Study of Common Property Resources, June 3, Bloomington, Indiana.
- Agrawal, Arun. 2000: "Small is Beautiful, but is Larger Better? Forest-Management Institutions in the Kumaon Himalaya, India." in *People and Forests: Communities, Institutions, and Governance*, ed. Clark Gibson, Margaret McKean, and Elinor Ostrom. Cambridge, MA: MIT Press.
- Agrawal, Arun and Clark C. Gibson. 1999: "Communities and Natural Resources: Beyond Enchantment and Disenchantment," *World Development*, 27(4): 629-641. Reprinted in Aaron Wolf, ed. *Conflict Prevention and Resolution in Water Systems*, Cheltenham, UK: Edward Elgar 2001.
- Anderson, C. Leigh, Laura Locker, Rachel Nugent, 2002: Microcredit, Social Capital, and Common Pool Resources, *World Development*, 30 (1): 95-105.
- Antinori, Camille Marie. 2000: "Vertical Integration in Mexican Common Property Forests", Ph. D. thesis, Agricultural and Resource Economics, University of California, Berkeley, Fall. (unpublished)
- Baland, J.M., and J.P. Platteau. 1999: "The ambiguous impact of inequality on local resource management", *World Development* : 27:773-788.
- Bardhan, P.K. 2000: "Irrigation and cooperation: An empirical analysis of 48 irrigation communities in South India", *Economic Development and Cultural Change*, 48:847-865.
- Berkes, Fikret. 2000: "Cross-Scale Institutional Linkages: Perspectives from the Bottom Up", IASCP 2000 Conference, Indiana University, June.
- Blomquist, William. 1992: *Dividing the Waters: Governing Groundwater in Southern California*. San Francisco, CA: Institute for Contemporary Studies Press.

- Bonin, J. P., Derek C. Jones and Louis Putterman, 1993: "Theoretical and Empirical Studies of Producer Cooperatives: Will Ever the Twain Meet?", *Journal of Economic Literature*, 31(3), September.
- Bromley, Daniel, David Feeny, Margaret A. McKean, Pauline Peters, Jere Gilles, Ronald Oakerson, C. Ford Runge, and James Thomson, ed. 1992: *Making the Commons Work: Theory, Practice, and Policy*, San Francisco, Institute of Contemporary Studies.
- Chopra, Kanchan and Purnamita Dasgupta. 2002: "Common Pool Resources And The Development Process: Evidence From India", IASCP Ninth Conference, Victoria Falls, Zimbabwe, June.
- Dayton-Johnson, Jeff and Bardhan, Pranab. 2002: "Inequality And Conservation On The Local Commons: A Theoretical Exercise", *The Economic Journal*, July, 112(481): 577-602.
- Furubotn, Eirik G. and Rudolf Richter. 1997: *Institutions and Economic Theory: The Contribution of the New Institutional Economics*, Ann Arbor: The University of Michigan Press.
- Haller, Tobias. 2002: *The Understanding of Institutions and their Link to Resource Management from a New Institutionalism Perspective*, IP 6 Institutional Change and Livelihood Strategies, Working Paper No. 1, www.nccr-north-south.unibe.ch.
- Hardin, Garrett. 1968: "The Tragedy of the Commons" *Science* 162: 1243-8.
- Hunt, Robert C. 1992: "Inequality and Equity in Irrigation Communities", paper presented at the IASCP third conference, Washington DC, September.
- Jain, Nihal C. 2002. "Heterogeneity and Equity: Some Contradictions and Compromises in Collective Action", paper presented at the IASCP Ninth Conference, Victoria Falls, Zimbabwe, June.
- Jodha, N.S. 1985: "Market forces and erosion of common property resources", in *Agricultural Markets in the Semi-Arid Tropics. Proceedings of an International Workshop*. ICRISAT, Patancheru, India, pp. 263-227.
- Kaul, Inge, Isabelle Grunberg and Marc A. Stern ed. 1999: *Global Public Goods: International Cooperation in the 21st Century*. New York: Oxford University Press.
- Keohane, Robert O. and Elinor Ostrom ed. 1995: *Local Commons and Global Interdependence: Heterogeneity and Cooperation in Two Domains*, London: Sage Publications.
- Kumar, Sanjay. 2002: "Does "Participation" in Common Pool Resource Management Help the Poor? A Social Cost-Benefit Analysis of Joint Forest Management in Jharkhand, India", *World Development*, 30(5): 763-782.
- Li, Tania Murray, 2002: "Engaging Simplifications: Community-Based Resource Management, Market Processes and State Agendas in Upland Southeast Asia", *World Development*, 30(2): 265-283.

- Libecap, Gary D. 1995: "The Conditions for Successful Collective Action." In *Local Commons and Global Interdependence: Heterogeneity and Cooperation in Two Domains*, ed. Robert O. Keohane and Elinor Ostrom, London: Sage. Pp. 161-90.
- McKean, Margaret A. 2000: "Community Governance of Common Property Resources", paper presented at the panel on "Governance and Civil Society," at the Fifth Annual Colloquium on Environmental Law and Institutions, "Sustainable Governance," 27-28 April, Durham, North Carolina (unpublished).
- Mosse, David. 2003: *The Rule of Water*, New Delhi: Oxford Univ. Press.
- Netting, Robert McC. 1992: "Unequal Commoners and Uncommon Equity: Property and Community among Smallholder Farmers", Presidential Address IASCP third annual conference, Washington, DC, September. Published in *Ecologist*, 1997, 27(1): p. 28-33.
- Olson, Mancur. 1971. *The Logic of Collective Action*. Cambridge: Harvard University Press.
- Ostrom, Elinor. 1990: *Governing The Commons - The Evolution of Institutions for Collective Action*, New York, Cambridge University Press.
- 2002: "Type of Good and Collective Action", paper presented on February 22, 2002 at the University of Maryland, Collective Choice Center and IRIS, in honor of Mancur Olson.
- Ostrom, Elinor, Roy Gardner, James Walker. 1994: *Rules, Games, and Common-Pool Resources*, Ann Arbor, MI: University of Michigan Press.
- Paavola, Jouni and W. Neil Adger. 2003: *New Institutional Economics and the Environment: Conceptual Foundations and Policy Implications*, Centre for Social and Economic Research on the Global Environment (CSERGE) Working Paper EDM 02- 06, University of East Anglia, Norwich.
- Sengupta, Nirmal. 1991: *Managing Common Property: Irrigation in India and Philippines*, New Delhi: Sage Publications.
- 1995: "Common Property Institutions and Markets", *Indian Economic Review*. 30(2), July-December. Pp. 187-201.
- 2001: *A New Institutional Theory Of Production – An Application*, New Delhi: Sage Publications.
- Shirley, Mary M. 1997: "Pressing Issues for Institutional Economists: Views from the Front Lines", paper presented at the International Society for New Institutional Economics (ISNIE) Conference, September, St. Louis (MO), Washington University (mimeo).
- Wainwright, C., W. Wehrmeyer. 1998: "Success in Integrating Conservation and Development? A Study from Zambia", *World Development*, 26 (6): 933-944.