

## **BEYOND THE TRAGEDY OF COMMONS\***

**Niraj Kumar\*\***

The debate initiated by Garrett Hardin does not seem to be concluding even 33 years after the publication of his seminal article “The Tragedy of Commons<sup>1</sup>”. He argued that users of common get trapped in an inevitable process that ultimately results in tragic loss of the commons, and to arrest such losses we need external interventions<sup>1</sup>. Researchers, later on, not only questioned the universal applicability of the hypotheses but also demonstrated that there are many other approaches of commons’ management than suggested by Hardin<sup>2,3</sup>. Empirical studies have also shown that communities have been managing their commons through their self-evolved local institutions and may not require any external interventions for it. However, many still agree that tragedy of commons is real and we cannot ignore it altogether<sup>4,5,6</sup>. Even Hardin himself, while redefining his metaphor, reiterated that his conventional wisdom still holds true for unmanaged commons<sup>4</sup>. The debate, however, on this dichotomy in views on management of commons theory remains inconclusive, and had generated more heat than light<sup>7</sup>.

In this paper, Hardin’s proposition on the management of commons and subsequent developments has been discussed in context of a case study from central India. Learning from the case indicate that unlike the growing views on the subject, which intends to outrightly negate the Hardin’s metaphor, there exists reasons to believe in his thesis. The article is based on a case study in Mandla, a heavily forested and tribal dominated district of Madhya Pradesh. In Mandla, once a well forested and managed area, slowly started experiencing the situation termed as ‘tragedy of commons’ which

ultimately resulted in the complete degradation of the area. However, again same community, which was responsible for its degradation, worked collectively to regenerate the forest. Based on the paper, it has been concluded that Hardin's metaphor is still a field reality, although community also demonstrates their capability of managing their commons in given situation. It has been found that the divergent views tragedy of commons, in reality, are two phases of commons' management, and occurrence of both of these depends on contextual factors. Further, the impression that tragedy of the commons is related with the commons that are only under "open access" is not always true. Applicability of findings is of great importance for sustaining participatory forest management and adds into the existing and established knowledge on the subject. In the next section of the paper fundamental concepts dealing with the forests as commons and, property right related with the forests have been discussed. The subsequent sections deal with the case, implications of the findings, and finally, conclusion of the paper.

Most of the Indian forests, particularly those in the vicinity of the villages are *de jure* government owned but *de facto* common lands. And these common lands are under varied management regimes<sup>2</sup>, i.e. encroached lands are under private management; areas with very strict control (like, national parks and sanctuaries) are under government management; most of the protected forests are *de facto* under community management; and those areas where non of the above is operative are under any one's management. Because of these varied 'management regime', which further are not very obvious, it becomes difficult to put such forests under any of the known four property regimes making forest protection a difficult task. And, like many other cases<sup>8</sup> tragedy in Indian forests also occurs after open access conditions are created.

Two characteristics namely, exclusivity, and subtractability have been used to define commons<sup>3</sup>. Theoretically, both of these characteristics are applicable in the case of Indian forests also, however, manifestation of second characteristics is not so explicit when the productivity of forest is more than the extraction. Further, the first characteristics too become subjective as the level of exclusion becomes context specific. For example, in many cases, exclusion is not possible when it is for collection of fuel wood and grazing, but when it is for timber extraction or in some case even for some non-timber forest products the exclusion is possible. In some cases, exclusion is possible by even little or symbolic resistance; in others, it may not be possible at all.

#### **The Case:**

The forest area lies in the Mohgaon forest range of East Mandla forest division of Mandla district - a tribal dominated district of the state of Madhya Pradesh in India. Tribal inhabited villages surround the forest patch of more than 300 hectares. Although villagers from at least four villages had been the traditional users of the forest patch but those from Bhanpur had been the major claimants of the patch because of its location and traditional use system. The village, with a total population of just above 500, is situated on the bank of the rivulet "Budhnari". Out of the 96 households in the village, 86 were of tribals (*Gonds* and *Baighas*). The literacy rate of the village was under 20%. The villagers' economy was based on agriculture and farm labour. and there were 162 landless labourers of which some 20% earned money by selling head loads of firewood collected from the forests in the market. Fodder was a important problem in the area, especially in summer when they have to depend on the leaves of saja (*Terminalia*

*tomentosa*), keolar (*Bauhinia purpurea*) and tinsa (*Ougeinia oojeinesis*). The village had very poor infrastructure and entire village remained unapproachable for months after the rainy season. Consumption of the locally prepared alcoholic beverage was prevalent among both male and female villagers.

The forest patch under consideration, a dense forest till the early 1980s, was dominated by teak (*Tectona grandis*) and bamboo (*Dendrocalamus strictus*). Legally, the entire patch was owned by the government, villagers extracted every thing they required from the forests. Although the neighboring villagers were also using the patch but those from Bhanpur were fully dependent on it for their forest-based needs. There was not explicit mechanism to monitor extraction but villagers restricted it for the self-use only. Population did not increase much in last ten years but extraction kept on increasing mainly due to increased use of wood in house construction, agriculture implements, grazing by animals, and more important by extraction for the sale. Villagers of nearby villages also started selling fuel wood extracted from the forests. Uncontrolled extraction of timber and fodder to meet the local requirements and frequent forest fires resulted in the degradation of the area. The forests which once had species such as, saja (*Terminalia tomentosa*), tinsa (*Ougeinia oojeinesis*), amla (*Emblica officinalis*), bel (*Aegle marmelos*), dhawada (*Anogeissus latifolia*), palas (*Butea monosperma*), dhobin (*Dalbergia paniculata*), etc. besides teak and bamboo, gradually degraded and were left with only misshapen trees and with some regeneration from coppice.

Although there was only one family fully dependent on the forest for its livelihood, the degradation of the surrounding area did affect the life of the entire village. Lack of fuel wood and fodder, and reduction in the grazing area were common

constraints faced by all. Women complained about the increased efforts and time spent in the collection of fuel wood. Landless labourers, who collected non-timber forest products (NTFPs) like tendu (*Diospyros melanxylon*) leaves, panwar (*Casia tora seeds*), and mahua (*Madhuca indica*) flowers for their own consumption and to be sold in the local market, were very badly affected.

The impact of the difficulties resulting from the forest degradation resulted in a village meeting chaired by the village head to which the forest guard was invited. In the meeting the need for regenerating forests was emphasized and the forest guard's help was sought. The meeting also elicited the whole village's participation in forest protection.

The personal interest of the village head and support from the forest guard paved the way for a formal beginning of the protection effort. It was decided to enact the *Ramayana* (a mythological epic) over the hill-top (previously forested) on third Sunday of every month. On the third Sunday of March, 1994 the *Ramayana* was enacted for the first time and on this auspicious occasion the village head requested villagers to protect the forest - 'the abode of their god' and to refrain from all activities which in any way damaged the forest.

Villagers, opposed to the village head, did not participate in the moratorium on grazing animals in the protected area, and this resulted in their social exclusion. Ultimately, under the social pressure they too agreed to protect the forests. Although the hill-top (protected area) became a non-intrusion zone for the entire village of Bhanpur, it became a free zone for those from other villages. To control the intrusion of neighboring villagers, a system of regular patrolling by villagers including children and women, was initiated. The system of protection was institutionalized with the formation of a village

level forest committee with the village head as the president. This committee was later on converted into a JFM committee with the help of local forester and the divisional forest officer. Villagers continued protecting forests, offenders were being booked, and outsiders feared trespassing in the protected area resulting into regeneration in degraded area. Since then the area had recovered substantially. Users had again started getting fodder and fuel wood and were expecting to get timbers for their own consumption.

**Conclusion:**

Thus, the case reveals that, initially, the forest area was practically unmanaged (without any purposive intervention) and was like an open access but had not encountered any exploitative extraction and it remained so till community experienced the reducing availability of the resource and then wanted to maximize self-benefits as early as possible. The situation changed to what Hardin termed ‘the inevitable process’<sup>1</sup>. Nonetheless, same users again turned forest-friendly and jointly evolved an institution to regenerate the forests after they experienced loss and when their inner communal urge to revive the forest emerged. The area that was ‘unmanaged’ and like ‘open access’ was converted in to ‘managed’ and was brought under the ‘group control’ by the community. Commitment to the locally evolved institution also changed users’ attitude and actions towards the commons. Before the evolution of local institution users evaluated their individual behavior on the basis of self-benefits; whereas, after they agreed for communal protection through the institution they judged their actions on the basis of set group norms and rules.

It is clear from the above discussion that state has not been able to manage the forests even if it has got legal ownership and almost every right required for the

management of the area. This supports the thesis put by Feeny and his colleagues that state ownership is seldom associated with successful management in less developed countries. Even in Latin American countries state control is said to be so weak that *de facto* open access has been permitted over state managed land<sup>9</sup>. As it has been revealed, when community realize that their requirements would continue to met from the nearby forests and their rights over the forests would not be diluted, community management remains innocuous. However, when they realize the change or even threat in above situation they try to maximize self-benefits. These changes intensify the problems of CPMRs because they increase the opportunity cost to the individual to cooperate, the temptation for elite to free ride, and the chances of over exploitation by the whole group<sup>9</sup>. However, it is also true that once community experiences the loss and foresees the possibility of regeneration, restarts working collectively and develops some local mechanism of restoration<sup>2, 3,6,10,11</sup>. However, this resumption of control is different than that community had before the commencement of situation like tragedy of commons. The property rights regime effectively changes to that of group control although the legal ownership remains the same; the behavior of the members started being guided by the rules and not by the norms that was the case earlier, *i.e.* the enforcement increased. People honored their commitment to their self-initiated local institution and this changed their action towards the forest as well. The peer group pressure or social control is a consequential mechanism of community management<sup>12, 13</sup>. This clearly indicates that for the sustainability of participatory forest management self initiated groups needs to be encouraged and no external system should ever be imposed from out side.

Thus, the case reveals that, initially, the forest area was practically unmanaged (without any purposive intervention) and was like an open access but had not encountered any exploitative extraction. Community perceived resources to be amply available and without any threat. It remained so till community experienced the reducing availability of the resource and then wanted to maximize self-benefits as early as possible. The situation changed to what Hardin termed 'the inevitable process'<sup>1</sup>. Nonetheless, some users again turned forest-friendly and jointly evolved an institution to regenerate the forests after they experienced loss and when their inner communal urge to revive the forest emerged. The area that was 'unmanaged' and like 'open access' was converted in to 'managed' and was brought under the 'group control' by the community. The realization that resource, which they are exploiting ruthlessly, is vital for their future sustenance is the most crucial factor determining whether community would act to stop the Hardin's inevitable ruin<sup>1</sup> or not. The success of such community actions is dependent on many contextual factors<sup>13</sup>. Commitment to the locally evolved institution also changed users' attitude and actions towards the commons. Before the evolution of local institution users evaluated their individual behavior on the basis of self-benefits; whereas, after they agreed for communal protection through the institution they judged their actions on the basis of set group norms and rules.

There are two apparent sub-processes which management of commons had undergone. First, from unmanaged but well stocked forest to unmanaged degraded forest; second, from unmanaged degraded forest to managed degraded forest. The case although proves that resources when unmanaged may suffer from the 'tragedy of commons' depending on the context but disagrees with the Hardin's contention that the 'ruin is

inevitable' as community can take self-initiatives to reverse the process of degradation. Correlating the tragedy of commons with open access property regimes, as has been done frequently would not be appropriate, as resource even under the open access was safe. Users' response depended on the contextual factors which are said to be in built in users' environment and affect users' strategies of management of commons.

#####

## References:

1. Hardin, G. *Science*, **162**, 1243 –1248 (1968)
2. Ostrom E., Burger J., Field C.B., Nogaard R.B., Policansky D. *Science* **284**, 278-282 (1999)
3. Berkes, F., Feeny, D. , McCay B.J., Acheson J.M. *Nature* **340**, 91-93 (1989)
4. Hardin G., *Science* **280**, 682-683 (1998)
5. Cannibal, G. L. and Winnard G.M. *Futures* **2**, 147-160 (2001)
6. Chopra, K., Kadekodi, G.K., Murty, M.N. *Economic and Political Weekly*, 189-195 (1989)
7. Hardin G. Personal communication (2001)
8. Feeny, D., Berkes, F., McCay B.J., Acheson J.M. *Human Ecology*, **1**, 1-12 (1990)
9. Richards, M., *Development and Change*, **28**, 95-117 (1997)
10. Negi, N.K. *Wastelands News*, **2**, 27-32 (2001)
11. Conroy, C., *Forest Management in Semi-arid India: Systems, constraints and Future options*, Natural Resource Institute report No.2656 (2001)
12. Kameswari, V.L.V., Pandey D.N., *Joint Forest Management in Buldana Forest Division*, WWF, India (2002)
13. Edwards V.M., Steins N. A. *Journal of Environmental Policy and planning*, **1**, 195-204 (1999)

---

**Author sincerely thanks G. Hardin, E. Ostrom, A. Agrawal, and DN Pandey for their valuable comments during the early stages of manuscript preparation.**

\* Paper submitted for the 9<sup>th</sup> Biennial Conference of the IASCP Victoria Falls, Zimbabwe, 17 – 21 June 2002.

\*\* Faculty of Forestry Extension, Indian Institute of Forest Management, PO Box: 357, Bhopal 462 003. Email: [nirajk\\_bpl@sancharnet.in](mailto:nirajk_bpl@sancharnet.in) , [nkumar@iifm.org](mailto:nkumar@iifm.org) .