MANAGING COMMON PROPERTIES:

SOME ISSUES IN INSTITUTIONAL DESIGN

By

Anil K. Gupta

W P No. 571

July 1985

INDIAN INSTITUTE OF MANAGEMENT
AHMEDABAD - 380 015
INDIA

MANAGING COMMON PROPERTIES: SOME ISSUES IN INSTITUTIONAL DESIGN

ABSTRACT

Designing institutions that co-ordinate expectations of different classes of rural producers in a manner in which income disparities are reduced; common property is better managed and infact rejuvenated (if possible); and redundancy for coping with uncertain contingencies are continually created; is indeed a tremendous challenge. Three major issues are discussed here. The concept of scarcity and its consequent effects on different classes are presented to answer the question: Who should bear what part of the loss for how long when supply of a basic resource is reduced. The unfortunate aspect of institutional innovations triggered by market forces is that they pass on the greatest part of burden on those who have least capacity of shoulder.

Second issue of Redundancy in rule making is presented to highlight the need for building capacity in institution to deal with unanticipated range of contingencies. The traditional moral values, it is argued serve as redundant means of guidance in various social actions, including resource management.

Finally, the role of state in providing assurance to different classes of resource users is discussed to question the merit of policy of privatization supported by numerous aid agencies and host countries.

It is hoped that paper provides framework for designing institutions that can deal with the complexity of resource use under degraded environments.

MANAGING COMMON PROPERTIES: SOME ISSUES IN INSTITUTIONAL DESIGN*

Designing institutions that co-ordinate expectations of different classes of rural producers in a manner in which income disparities are reduced, common property is better managed and in fact rejuvenated (if possible), and redundancy for coping with uncertain contingencies are continually created is indeed a tremendous challenge. Some issues which might offer ground for further discussion and exploration are listed here:

1. The Concept of Scarcity

Scarcity (as the term `overgrazing' implies) of a resource is relative. The norms of social behaviour which regulate individual excursions into domain of immoral or sinful behaviour are modified through retention of values in the form of myths because these values cannot be retained in the explicit form. The concept of `auran' land is one such effort.

However, like a thermostat, `auran' could perhaps regulate collective behaviour only till the entire collectivity was bounded by common dilemma or opportunity matrix. Once market penetration started and disparities in individual resource ownership got magnified through differentiated access to technologies and institutions, the scarce resource was substituted in some cases (stall feeding instead of grazing by cultivator - cattle owners) and marginalised in other cases (where it offered an infinitesimal share of the total demand for that resource). Once the time horizone on which different classes appraised their respective returns from investment in common scarce resource from investment in common scarce resource started diverging, the calculus of respective pay-off matrix became less and less comparable. Multi-market involvement of various classes of producers resulted in such inter-penetration of factor and product markets that choices of any class in any single market (say fodder or livestock market) could not be analysed independent of the constraints or opportunities in other markets.[1]

The historical process influencing this divergence produces different moral institutions as well as different economic reasons for collective behaivour. Market prices in such a context can very seldom allocate resources to the most valued use of the resources (Ingram and Mann, 1984: 125-150). "Vision of shrinking resources, on the other hand, make it less likely that those who hold power will invite new groups to share either in the decision process or in the benefits of government. Some must lose (Miewald and Welch,

---

* This paper raises some theoretical issues with regard to management of common properties, particularly range lands in arid environments. The empirical aspects of this problem can be seen in accompanying paper by the author, entitled, "Socio-ecology of Stress: Why do CPR management project fail" prepared for the conference on the Management of Common Property Resources in the third World, BOSTID, National Research Council, US, National Academy Sciences, Washington, April 21- 27, 1985.

1 Fife (1977) quoted by Giller and Jamtgaard (1981) provides an instance of this type.

1983: 17). However, as the problem is further illustrated by Thurow (1980), the challenge is how to allocate these losses. Who should bear what part of the loss for how long becomes the key question, as we have seen from the sheep and pasture development case study. The tragedy is that institutional innovations triggered by market or public bureaucracies often pass on the greatest part of the burden on those who have the least capacity to shoulder. The definition of scarcity and the coping mechanisms to deal with various implications of enhanced scarcity in the short-run need more precise conceptualization.

2. Redundancy in rule making

Neumann pointed out in his paper on computers that redundancy makes complexity possible (Cambell 1982: 73). "Rules", Campbell adds, "which are a form of redundancy, generate enormous richness of expression language" (1982: 74). Rules leave fewer things to chance and thereby make emergence of institutional devices to coordinate human behaviour possible. However, rules and rules to make rules require that trade-off between certainty in stable outcomes and uncertainty of ingenious or innovative outcomes is very delicately achieved.

In management of commons this is a crucial issue. The `aurons' survived in regions where rules about rule making were perhaps still guided by traditional norms, inter-household inequality was less and environmental risk was more or less uniformly perceived. The degree of insurance which different classes of rural producers needed to cope with varying risks and vulnerabilities implied that institutions must not only anticipate the range of variability but also provide rules for dealing with this range. Surely, redundancy is inherent in this process. Too much of it may confuse and too little may cripple.

Societies evolve redundancy through a mix of norms and values or myths and values. Lindberg tries to resolve the conflict between economists device of `expedient choice' and sociologists framework of `moral obligations' with the aid of a mode of rational repetitive choice in a similar way, as Runge's. He argues that moral choices can be sensitive to sanctions without being expedient. And he also shows how "expedient choice can be influenced by `dormant' normal obligations."

The `dormant' moral obligations are, what we may call, a quota of redundancy that makes cooperation and not conflict as the basic human trait. The catch is that in developing societies, caste and class dimensions complicate the relational matrix. However, to simplify, one could suggest that institutional alternatives for managing commons will have to incorporate redundancies that provide for innovation. Adjustment and adaptation are essential homeostasis responses of any social structure to a condition of stress. The problem arises when negative homeostasis (Gupta 1981) characterising deficit budget households generates choices which maximise survival probabilities in short term. The future adaptive potential through such adjustments is reduced. But in an unequal race, the poor have not much choice except to lose but not too soon and not alone.

In the case of sheep and pasture development projects, the fact that successive droughts were a rule rather than exception was over-looked. In such years how would the sheep in the plots would be maintained was also ignored. Further how would fences be maintained given the scarcity aggravated in drought year and relatively speaking better grass cover at the plots was also not appreciated. The question that since benefits from plots were to accrue to only few people who were members of the society, why should the rest cooperate in maintaining the plot was ignored. Recall here the traditional value cherished by all that dead twigs from `auran' would be used only for the funeral pyre of those who kith and kin did not have means to afford purchase of wood for the purpose. Here too, not everybody expected a gain from maintenance of auran. Though there were cases where water from well in the `auran' land was used by everybody in the drought year when other wells became dry.

Thus the traditional `moral' obligations could have been used as building blocks for institutionalising certain redundancies in resource management. e.g. in the event of drought, sheep of most poor would only be allowed to graze in the pasture plots.[2] Thus anticipating contingencies and building rules for such moments could be a necessary condition for institutional survival.

3. Assurance Mechanism: The Role of State

In the tradition of `Challenge - Response' model of Joynabee: and contemporary contingency framework in organizational theory Runge (1983) suggests that "different institutions are responsive to different local environments in which institutional innovation takes place." He concurs with Hayami and Ruttan (1984) to add that institutional innovation, like technological innovation, is responsive to the relative abundance of factors, and the resulting costs and benefits of alternative strategies. Notwithstanding the fact that technological change could be an individual decision, institutional change could never be, it is important to notice the following contradictions.

a) While it is accepted and appreciated that the search for appropriate institutional responses must respect both the traditions and the constraints of local needs in specific choice environment, the crucial issue is who will make this search and how will benefits and costs of the search and solution dispersed over varying parties not affected equally by current strategy of resource management.

b) Given the imperfections of markets and different price regimes operating for different classes in addition to the differences in the access to information, how will abundance or scarcity of factors be denied?

[2] William Bently narrated a story about the way British rulers solved the problem of milestones being stolen by villagers for using at home in colonical times. It was said that they painted the stones orange at the top so that these looked like local deities. Even if the story is imaginary, the moral is clear.

To underline the issue that above questions are not of semantic or rhetorical importance, we may express our whole hearted agreement with Runge's substantive suggestion about desirability or validity of common or joint use and yet add disagreement with the hope he places in the institutional innovation model. The logic of common resource use and the institutional innovation model, to our mind, are rooted in different paradigms. In the former case, the key argument, as rightly made by Runge, is the provision of security of expectations or assurance as endogenous institutional mechanism.[3] The fact that these mechanisms ensure collaborative behaviour and that the involved in searching or sanctioning new rules of coordination are shared, precisely prove that the institutional innovations cannot be responsive to relative abundance or scarcity of different factors and resultant costs. Markets cannot discriminate amongst the need, want and demand; some institutions can. And these institutions were not result of different doses of factor supply, rather these caused or led to such arrangements of resource use that different factor supplies came about. One of the ways to come out of the ratchet of contingency theory of organization (which is not much of a theory anyway) without placing full faith in the strategic choice framework is to appreciate both the historicity of institutional adaptation and evolution of interdepdencies (Gerlach and Palmer, 1981, Gupta 1981, 1984) in socio-ecological perspective.

This framework implies that range of economic enterprises that different classes of rural producers can maintain in a region or a context is defined by the ecological conditions in developing rural societies. The scale at which these classes may operate is a function of a) access to institutions; b) the terms at which simultaneous operations in factor and product markets are managed, c) access to informal exchange mechanism and d) historic surplus or deficit in the household budget. The resultant risk perception is modified by access to inter and intra household individual risk adjustment like tenancy, credit, labour contract (examples of the former) and asset disposal, migration (examples of the latter); besides communal risk adjustment devices like auran, grain golas and public relief systems like public employment works, gruel kitchen, etc.

Differences in the risk perception in scarcity prone arid environments generate varying time horizons in which different classes of rural producers appraise their investment choices. It is obvious that differential stakes in the way environmental sources are managed would generate different institutional formats as ideal choices by respective classes. The traditions provide the grammer by which the new language or rules for organising earlier language can be developed. However in a caste ridden society with feudal or semi-feudal past, one should not expect these traditions to take us to far.

Need will remain for public interventions (ruled by hopefully a socialistic elite) to provide different degrees or ration of assurance to people operating at varying levels of mean variance combination of enterprise and different institutional design to cope with varying extent of environmental risks inherent in different ecological contexts. Whether a democratic structure of state in an iniquitous society will generate such interventions is a

[3] When distant markets are linked as in case of dry fodder, how to restrict signals specific to local factor supplies become a serious problem.

question that cannot be left to the market forces. At the same time survival of many pooling practices like irjik (pooling of bullocks), cheetu (rotated saving and credit association), and pachdia (reciprocal labour for transplantation, thatching of huts etc) particularly among the poor are proof that similar norms of pooling and redistribution can be evolved. The problem arises when we link pooling and redistribution in the typical Raffessin framework of so called modern cooperatives.

The role of the state in such a context becomes quite important and Privatization[4] offers not much hope for the following additional reasons than what Runge (1983) has given:

a) In the case where commons have been degraded beyond a limit such that the cost of supervision and restricted access through privatization is more than the value addition e.g. after a particular level of degradation in high risk low rainfall areas, the principles of ecological succession advise that annual less palatable species may dominate and perennials are suppressed. The wind erosion in greater part of the year thus caused may offer no benefit through privatization. Investment in land shaping on watershed basis to conserve moisture, necessary for perennials to grow may require group action that perhaps only state can initiate and support.

b) Also when one views a situation of partial privatization implying coexistence of private with commons, the situation becomes more complex. On private lands, profit maximization strategies in the shortest run may generate such solutions that may not increase the local supply of fodder in any way. At the same time the poorer people dependent on commons have to make do with lesser supply of say equally bad or even worse part of commons. (Assumption can easily be made that privatization effort often is aimed at best of the worst lands). They cannot afford say the minimum cost of even safeguarding the private boundary necessary for privatization. Further their resource requirement due to typical specie mix of livestock (biased in favour of browsers) cannot be met from the privatized individual share of the commons any way. In such a case degradation of remaining common may essentially take place due to reduced supply of common through partial privatization. State has to play a crucial role in regulating such outcomes.

In any case, private cultivable wastes were not maintained any better than common `wasteland'.

Gills and Jamtgaard (1981: 137) provide an interesting institutional alternative when they suggest that critical resource like water in semi-arid and arid areas and winter feed in temperate areas need to be regulated rather than managing common pastures. It may be added hero that some of the traditional arrangements of regulating such critical

[4] It is interesting to note here that a project is likely to be approved by Indian government soon under which ten hectares plots of waste lands would be given on long term lease to private entrepreneurs coupled with subsidy and cheap credit so that these lands would be out under forest. There is a hope (in the absence of any institutional mechanism) that wood so produced would enhance local fuel supply and not land upon paper mills despite universal experience to this effect.

resources may even pass into the hands of feudal chiefs. In Banni area, Asia's biggest pasture located in flat lands of Kutch (Gujarat, Western India) the rain water is the only source of fresh water because of high salinity in soil and underground water. The traditional devices of water filtering and storage have been under the control of panchayats which in turn were dominated by few tribal chiefs. These chieftains extracted the rent from the immigrants who could not graze the animals without access to water. Further recent introduction of fresh water supply has aggravated the problem because traditional control has been reinforced.

The issue however still remains that traditional institutional mechanism in many case can provide the conceptual anchor for deriving future choices that will be biased in favour of poor herds men. Summarising, one can add that a) scarcity of a particular resource is a function of technological choice of different potential users of that resource under given conditions of supply. The technological choices are not independently and autonomously made. These are constrained by historical hiatus between desirable choices a feasible options of different classes. In other wards those who manage more goats in arid land are not unaware of advantages of maintaining good cattle. Thus the coping mechanisms vis-a-vis different perception of scarcity would offer a wide range of institutional choices dependent upon whose risks resources and skills are being discounted at what rate in the market.

The concept of redundancy was introduced essentially to enable precise trade off between need for certain consistent outcomes and opportunity for innovative outcomes not expected or anticipated always. The well-known concept of assurance mechanism and role of state have been added to make several points. One, the ration of assurance needed by different classes operating at different levels of mean and variance in the enterprise cash flow varied; two, the traditional sources of cooperation particularly amongst poor operating simultaneously in factor and product markets needed proper appreciation; three, the markets did not always succeed in discriminating between need, want and demands, though some institutions could; four, privatization of common did not necessarily offer better alternative apart from other reasons, also because it could not offer a technically feasible and yet privately profitable alternative when degradation had already taken place beyond a limit, and five, the partial privatization often led to increase of the pressure on remaining commons worsening the condition of common as well as the people dependent on common (this further intensified substitution of grazers by borrowers).

The state had to play an important role of providing differential assurances to different classes, providing scope for institutional innovation that served the interest of poor and did not distort factor supplies in favour of rich and finally by providing resources for making collective choices feasible.

References

1. Campbell J, 1982 The Grammatical Man, Simon and Schustor, New York.

2. Fife D, 1971, Killing the Gooose, Environment 13:20-27 quoted in Gilles and Jamtgaard, 1981.

3. Gerlach Luther P and Gary B Palmer 1981 Adaptation through evolving interdependence in Hand. ok of Organizational Design eds. Paul (Nystrom and WH Starbuch, Oxford University Press, pp.323-384.

4. Gilles, Jere and Keith Jamtgaard 1981, Overgrazing in Pastoral Areas: The Commons Reconsidered, Sociological Ruralis pp.129-141.

5. Gupta Anil K, 1984 Why Poor don't Cooperatie- A study of traditional forms of cooperation with implications for Modern Organization, CMA. IIM Ahmnedabad mimeo.

6. _____ 1984 Cooperation in Co-operatives: Contribution of Risk, resource and skills a paper invited for CIRIEC Congress, Florence, ITAL.

7. _____1981, Farmers' Response to Cooperative Project Implementation: Cases in Dairy and Pasture Development in Arid Regions, Paper presented at XI IUAES symposium on `Traditional Cooperation and Modern Co-operatives, Amsterdam.

8. Hayanic Y and V W Ruttan 1984 (forthcoming) Agricultural Development: A Global Perspective, Baltimore, John Hopkins University Press quoted in Runge, 1984, op.cit.

9. Iungrem Helen M. and Dean E. Mann, 1983 Political Responses to Environmental Scarcity in Scarce Natural Resources The Challenge to Public Policy Making, Ed. Susan Welch and Robert Miewald, Sage Pub. pp.1-150.

10. Zindenberg Siegwart, 1983, Utility and Morality, Kyklos, 3613 45-468.

11. Miswald Robert and Susan Welch, 1983 Natural Resources Scarcity: an Introduction in Welch and Miewald o.cit. pp 9-24.

12. Oakerson Ronald J. 1984 A Model for the analysis of Common property problems BOSTID, NRC, Washington.

13. Runge Car Pisle Ford, 1983 Common property and Collective Action in Economic Development, Paper preared for BOSTID OTA, National Research Council, Washington.