

80

3
The
Answer Monday

DIVERSITY IN FORMS OF PARTICIPATION

**WORKSHOP IN POLITICAL THEORY
AND POLICY ANALYSIS
513 NORTH PARK
INDIANA UNIVERSITY
BLOOMINGTON, IN 47408-3896 U.S.A**
RF 4/25/03

Nirmal Sengupta¹

A plea to
Systematize data
collection

Interest in participatory management has become almost universal. However, the way the programmes are designed leave much room for improvement. Primarily because it reduces costs (or increases benefits by efficient management) irrigation departments now consider user participation as a desirable management option. Transaction cost in management of a common pool resource like water is high. It is uneconomic to have bureaucratic management. But the way participatory programmes are designed often make them uneconomic for the farmers even though the programme designers believe otherwise.

Any programme needs certain guidelines to start with. In the bureaucratic designs of these programmes very often elaborate details are given which include membership rules, election and reservation procedures, list of functionaries, specified duties and responsibilities, norms of benefit distribution and cost sharing, accounting procedures and reporting tasks. Although these rules are made ostensibly to facilitate the functioning of user organisations they actually facilitate the external administrative tasks. One set of rules help streamlining the functions of organisations that makes performance evaluation from the top easier. The other set of rules require that the farmer functionaries maintain properly a large number of registers of attendance, collections, expenditures and other materials for auditing. The agencies expect farmers to comply with these guidelines. It is now recognised that the role of an extension agent must be that of a facilitator not of an instructor. However, the programme guidelines have not been qualitatively different to reflect awareness of this changed role.

Implementation of these guidelines increase the transaction costs of the user organisations and consequently, reduce their marginal net benefits. In turn,

¹ Madras Institute of Development Studies, 79 Second Main Road, Gandhinagar, Madras - 600020. Paper presented in Workshop on "Participation, People and Sustainable Development : Understanding the Dynamics of Natural Resource System", March 17-20, 1996, Nepal.

the net benefits to farmers for cooperation is reduced. Since the basic incentive of farmers for cooperation arises from net benefits they obtain in participatory works, the consequence of such elaborate guidelines is reduced incentive for cooperation. I dare say that the lukewarm response of farmers to many such participatory programmes may owe to the agency procedures. Several researchers have brought out different dimensions of these transaction costs which establish the necessity of a more cautious approach in farming guidelines and rules. Hanna (in Hanna and Munasinghe ed. 1995) noted that "when regulations are acceptable and are considered legitimate by those whose interests are being regulated, compliance with regulations increase and consequently, management costs decline". Ostrom (1990:96) pointed out that "cost and benefits of monitoring a set of rules are not independent of the particular set of rules adopted. When appropriators design at least some of their own rules they can learn from experience to craft enforceable rules ..." It follows as a corollary that there would be numerous varieties in organisations adapting to different settings. Guidelines given in participatory programmes must be such that they primarily facilitate farmers own way of functioning.

A THEORY OF DIVERSITY

Institutions are essentially mechanism for the removal or reduction of *uncertainty in the area of human interaction*. At the core, they consist of rules which outline what actions are forbidden, required or permitted by everyone. Rules may not be fully observed by everyone and at all times. They do not eliminate but reduce the uncertainties of behavior of human agents who have to enter into any kind of joint action. The first source of variations are therefore the rules of institutions. Wide variety of operational rules for irrigation works have already been noted. This is the most obvious source of variation and I will not deal much with this sphere.

To the irrigation departments the rest of the human activities, even that of another irrigation agency, may be external. To the farmers however, these are not so. Irrigation activities are only one of many elements of individual farmers whole economic system. This makes a sharp contrast between the approaches to participation by agencies and farmers. Agencies address only a few sphere for action considering the rest as externalities which can not be altered. Farmers tends to reduce the externalities in wider areas. Indeed,

their efforts may be directed to change the whole set of attributes of the action situation that includes the provision and appropriation externalities, the community attributes, settlement patterns, relations between different cosharers which includes property rights, law and authority rules etc. They succeed at times to influence some of these wider levels of externalities and create interesting variations. I will describe a few examples. Success in changing externalities to positive direction gives more incentive to farmers and facilitate participation and better performance. On the other hand irrigation agencies find these areas external to their domains and are difficult to influence.

There is a third source of variation. Rules involve cost in enforcement. Rules are cost efficient if they earn voluntary compliance. For individuals who must obey the rules even the cost of remembering is reduced if it becomes a habit. For the whole community such habits becomes norms and customs. Conformation to rules and gradual obviation of the enforcement mechanism result into sustainable rule-following. This is also an important source of variation, from legal enforcement of rules to customs which may even be sanctioned by extra-legal systems. Beginning with Arrow in the early seventies economists have started questioning why is it that our age depends so excessively for economic motives than norms and customs compared to any other ages for managing economic activities. Is it only because of our observation with 'economic man' ? Are we really economic in banishing norms and customs when evidence is accumulating that the alternative may be more cost-efficient.

It is being argued more and more that norms and customs are indeed, social capital. Investments in building them may be meaningful. The investments take the forms of education, acculturation, festival, celebrations, rituals etc. To the farmers they are definitely cost efficient forms of institutional management since they greatly help in reduction of uncertainties in behavior of other human agents. This is not to argue that the traditional norms and customs need to be honored always. In the changed contexts of societies certain norms, particularly that of allocation, deserve changing. But this is essential to recognise that new norms and customs arise. Conscious efforts must be made in that direction too.

Rules are by nature, innovations and it is improper to expect that innovative ideas would come merely from participation. In fact this is an area where the agencies undertaking the participatory programmes have much to contribute. They may be helpful for disseminating the innovative forms.

Also, to facilitate many different forms the guidelines must be more flexible accommodating variations.

SOME EXAMPLES

I will substantiate here the three kinds of variations and their significance on cost-benefit situations faced by farmers. These are from well-established organisations; some are traditional, some others, of more recent origin. For most of these I will depend on my experiences of irrigation systems in different parts of India, Indonesia and Philippines. Besides, some secondary materials have been used.

I. Variation in Operational Rules

Operational rules include boundary and membership rules, authority and aggregation rules, scope rules, information and decision rules, payoff and contribution rules etc. Several studies have collected considerable material on varieties of existing operational rules. I will not dwell on this much known area.

II. Variations Made² in the Action Situation

System Design

Very often farmers are asked to participate in O & M when system have already been constructed. In those they have little scope of changing the designs. In some programmes however, involvement of farmers is sought at the design state itself. It has been noted that some of the suggested

² Only those variations which are created by the contingencies of Irrigation Situation are considered.

alternations were to facilitate farmers participation. In a project which had altered the designs following farmers suggestion, in the Small-Scale Water Resource Development Project in norther Thailand taken up by Khon Kaen University and New Zealand Government Bryan Bruns (in Yoder and Thurston ed. 1989 : 107-119) shows how changes in key aspects of weir design like size of structures, use of stoplogs to make a variable crest, use of simple put robust designs, vertical walls, stilling blocks and a bridge had come to facilitate local participation in planning, construction and operations of small weirs. In another study in North Sulawesi Vermillion (in Yoder and Thurston ed. 1989 : 138-9) went further classifying the farmer-suggested design alternations by their decision criteria. Some suggestions made by farmers originate from their better micro-ecological knowledge than that of the engineers. Understandably such knowledge will be readily acknowledged. In fact, the agencies often argue this single point, and favour farmers participation at the design stage in order to benefits from their intimate local knowledge. But Vermillion observed that this class of reasons account for 42 per cent of the suggestions. The rest of the suggestions were like that the channels should follow farm boundaries, planting of tree crops should be considered, designs should permit the pre-existing availability of multiple water source, should combine conveyance and drainage function in the same channel minimise channel divisions and levels of network hierarchy etc. It should be noted that these are new aspects not found in engineering design. Vermillion indicated that in making these suggestions farmers had considered some other aspects which were (i) additional to project criteria and even (ii) incompatible with the project criteria. It is very unlikely that the agency promoted participatory designs will admit these types of farmer considerations. In turn, it is also likely that the farmers will find the designs as impose and alien and will have less inclination for participation. In the study, each of the two categories (i) and (ii) accounted for 29 per cent total redesign criteria.

Design variations that support farmer participation have also been studied in case of traditional irrigation systems. A common motivation is facilitation of allocation (e.g. Ambler; Yabes, both in Yoder and Thurston ed. 1989). sometimes traditional irrigation system are so designed by the farmers that they can utilise their special capabilities like intensive monitoring from close quarters. Kallapiran and Ratnavel (1995) analyzed the Calingula type of weir once widely used in South Indian tanks. They observed that this type of weir could store maximum water without affecting safety of the tank. The farmers used to keep a close watch and removed or replaced cut stones (called Dam Stones) depending on the water inflow rates. In flood prone

loamy soils of Bihar in India tanks were often secured by erecting additional embankments partitioning their beds. Outlets in these partitions allowed free flow of water. But if one wall collapsed after heavy flood farmers used to rush to close the outlets before the other sections were emptied (Sengupta, in Yoder and Thurston ed. 1989 : 219-220).

In intergroup allocation too farmers show a marked preference for an alternative design than the commonly used one by the engineers. In most modern canals systems distributaries run parallel over long distances. Farmers on the other hand prefer impounding of distributaries, after serving one unit, into the mother channel, thus combining both conveyance and drainage functions and limiting the scope of inter-unit disputes. This pattern has been noted for traditional major canal systems like Kaveri canals in India (Sengupta, 1991 : 162) and as farmers suggested redesign (Vermillion in Yoder and Thurston ed. 1989 :136).

LOCATION AND PATTERN OF LANDHOLDINGS

Physical structures are within the purview of the irrigation departments. Hence some investigations and some changes have already been made into this area as noted above. The other spheres of farmer externality have rarely been studied from the perspective of farmer participation. The important connection between the landholding location pattern and irrigation delivery is recognised. There exists even a few irrigation development programmes which accompanied land reforms of various kinds meant to facilitate irrigation. However, farmer involvement was not sought while designing these land reform measures. Hence their impacts are mixed; some of these designs actually restrain participation.

A very common pattern of landholding implemented by agencies is herring-bone pattern where every holding must have direct access to delivery channels. Such a locational pattern is also found in traditional; system like that of *Zanjeras*. On the other hand the land consolidation method used in northern India canals, called *Chakhandi* system, use blocks of land parcels as reference units for facilitation. Both the designs are easily understood by the engineers. They facilitates allocation, but does not have any contribution to increasing farmers participation, but does not have any contribution to increasing farmers participation. Unless there is a good organisation the **tail-**

end syndrome works and other problems of distribution continue.

As an excellent example of locational patterns which facilitates participation I will cite the case of traditional irrigation in central Bihar (Sengupta, 1991a : 110-111). In one village that I studied the service area of a distributary was owned by 35 landowners in 152 parcels. Most of them therefore, had landholdings distributed over head, tail and middle of the distributary. Thus all the landowners were interested that there is no disparity in allocation between the head and the tail. If there was shortage of water the tail section remained unirrigated but there was no particular tailender to suffer more than others. In consequence all farmers are interested to cooperate for irrigation works.

This may not be very common pattern. Investigation may reveal more such facts. It is known that in the past both in India and Europe peasants practised varieties of land redistribution mostly of Sri Lanka, which has found a place in modern irrigation management, belongs to this class. In brief, it is a system of temporary redistribution of land among the farmers in an irrigation command meant to avoid the tail-ender syndrome. The principles that guide complex landholding pattern in *Subak* is not yet fully understood. They too may have some allocational significance that perpetuates participation.

In fact, favourable pattern of landholding locations may go a long way to facilitate cooperation in irrigation systems. Tank beds occupy almost as much area as tank commands. The encroachment of the boundaries of tank beds is a serious problem in most parts. It is difficult to believe that even the whole of the tank beds may be used for cultivation regularly without endangering its major role as reservoir. But this was once extensive ail over India and survives in some parts even now. Most tanks contain water for only one season. During the dry months they remain unused, just as their command areas. However, unlike the commands the tank beds are rich in subsoil moisture which is excellent for many cash crops grown in the dry season. In some parts farmers still cultivate year after year, cash crops in the tank bed during the dry season along with irrigated wet crops in the command areas in the wet seasons. Because of a characteristic landholding location pattern no one tries to encroach the tank bed as in other parts. I could finally understand the complex system when by chance I observed land consolidation operations that was going on in one such tank irrigated village, The farmers, after repeated lobbying, could finally impress the consolidation officers about the necessity of observing some principles

(Sengupta, 1993b). These were (a) land owned by one in and out of tank bed should not be consolidated and (b) the size of one's landholdings in tank bed should not exceed a half of his holdings in the command area of the same tank. Thus cultivators had a dominant interest in using tank land as irrigation source and not encroaching it for perpetual cultivation.

DELINEATION OF BOUNDARY OF A SYSTEM

The agencies are accustomed to think boundaries of systems as fixed, farmers relocate the boundaries, if they can, to attain high water use efficiency in each specific water availability situations, which varies from year to year, sometimes even within a year. Here are few examples.

EMFISA system in hilly terrain in southern Mindanao was considered by NIA as having a water-use efficiency as high as 87 per cent. They define two types of boundaries, one core and another, secondary. The demand of irrigation for the core area is met first. Whatever surplus is there is then systematically allotted to the secondary command. Thus, every drop of water was used efficiently.

Another very interesting system still prevalent in south India is *Kandavettu* (Sengupta, 1991a). If there is dearth of water in a particular season after the crops have been sown, the farmers opt for this system. Instead of spreading the available water thinly over the whole command they decide what percentage can be adequately irrigated. Each farmer then mark the agreed proportion of this holdings and receive water to irrigate only that part. As adequacy of water supply at crucial stages of plant growth is extremely important this method ensures a better output than spreading of water thinly over a wider area.

Other manners of redefining system boundaries include restrictions imposed on gravity irrigation during a scarcity while allowing irrigation from shallow wells in the command area or during a severe scarcity, imposition of complete restriction on command area irrigation, sometimes converting the tank beds to cultivated since that would be the only part containing some run-off (Sengupta, 1993 : 84-87).

III. Variations in Habits and Customs

We have discussed that through the passage of time conformation to rules lead to gradual obviation of the enforcement mechanism. In such situations where habits and customs sustain participation the formal process of decision-making become largely redundant. It is rarely understood by agencies that the formal decision-making process insisted upon by them impose additional cost on farmers, particularly in the form of allotment of specific time. Unless there are conflicts there are little necessity of enforcement. Hence enforcement mechanism involving considerable cost may be gradually eliminated. Well established norms also make ledger keeping unnecessary and wastage. A gradual development towards establishment of customs (Sengupta, 1994) must be the target of the extension agencies. But this area is still very little understood. I will only cite a few cases to show the farmers own way of conducting business in a very cost-efficient manner.

I found in all my case studies (Sengupta, 1991a) the local 'clubs' play an important role in planning and information circulation. These 'clubs' are not modern types. These are shaded places under trees, tea stalls, beer joints and local markets where people spend their spare times. Here they have enough time to discuss and in a very cost-efficient manner, without affecting their other business. It is in such places where most of the operational and maintenance decisions are made in organisations where norms are well-established and therefore, conflicts are rare. I had recorded (Sengupta, 1991 : 198) a case in Philippines where a daring decision like construction of a four kilometers long channel through a hilly terrain using rudimentary implements was taken up by farmers after an entrepreuneuring farmer, in such a beer joint, had the opportunity to discuss the possibilities for months.

The anthropological studies of irrigation association till the seventies used to depict a more exotic setting for participation - recording customs, festivals and rituals. After the entry of modern extension agencies, banks and rational choice theorists this environment has been banished. We rarely talk of customary labour for irrigation management like *Bayanihan*, *Kudimaramath* and *goam*. Reference to Community Organisers have become frequent while customary use of water masters like *ulu-ulu* and *neerpaichy* find no place in agency guidelines. Common argument is that these customs have ceased to exist. Is it, or we have made it difficult to

them to find a place ? There is now very little effort to establish parallel customs. Besides, one must not forget that the earlier effort of participatory management, though termed revival of these systems, were actually established of alternative systems by evoking the locally accepted spirits of cooperation. This is not to say that the alternatives established were ideal or even desirable. This is only to argue that the institution building process may be made more cost-efficient by ingenious use of customs.

The only known case of such an effort in the more recent period is the inclusion of *bethma* institution in the Sri Lanka irrigation rehabilitation programme. The formulations were left vague in the guidelines considering that those were traditionally common knowledge. In consequence, the explanations came to be decided locally, by the interplay of different interests. Several studies (e.g. Spiertz, 1992) have noted the wide difference in characters of these institutions from the traditional ones resulting from the power play of interested groups. What they failed to note however were that (a) the resulting organisations were not traditional but modern and adapted to the existing realities and (b) the use of the image of a custom had made process of establishment of an institution much easier. Norms and customs are not characteristics of only the past ; even our modern efforts at interventions are breeding ground of new norms and customs. Once we understand the importance of norms and customs and learn how to develop them we may be able to design easily sustainable participatory programmes equitable in content and customary in form.

Reference:

- Benjamin, Paul et. al. (1994). *Institutions, Incentives and Irrigation in Nepal*, DFM Project, Nepal, mimeo.
- Coward, E. Walter Jr. (1985). "Property, Resistance and Participation : The State and Traditional Irrigation System"; paper presented at 1985 Meeting of Society for Economic Anthropology, Warrenton, Virginia, April 11-13.
- Hanna, Susan and Mohan Munasinghe ed. (1995). *Property Rights and The Environment*, The Beijer International Institute of Ecological Economics and The World Bank.
- Kallapiran, S.N. and S.M. Ratnavel (1995). "Technologies of Traditional Tank Structures", in N.V. Pundarikanthan and L. Jayasekhar ed. *Proceedings of the National Workshop on Traditional Water Management for Tanks and Ponds*, Centre for Water Resources and Ocean Management, Anna University, Madras.
- North, Douglass C. (1990). *Institutions, Institutional Change and Economic Performance*, Cambridge University Press, Cambridge.
- Ostrom, Elinor (1990). *Governing the Commons : The Evolution of Institutions for Collective Action*, Cambridge University Press, New York.
- Ostrom, Elinor, Roy Gardener and James Walker ed. (1994). *Rules, Games, and Common-Pool Resources*, University of Michigan Press, Ann Arbor.
- Sengupta, Nirmal (1991a). *Managing Common Property : Irrigation in India and the Philippines*, Sage, New Delhi.
- Sengupta, Nirmal (1991b). "Spatial Distribution of Landholding", in B.N. Yugandhar and N. Mukharjee ed. *Studied in Village India : Issues in Rural Development*, Concept, New Delhi.

Sengupta, Nirmal (1993). *Use-Friendly Irrigation Designs*, sage, New Delhi.

Sengupta, Nirmal (1994). "Turnover Program -Some Theoretical Basis", paper presented to *International Conference on Irrigation Management Transfer*, Wuhan, China, September, mimeo.

Spiertz, H.L.J. (1992). "Between Cannibalism and Pluralism : On the Construction of Legal Framework in Irrigation Management in Bali and Sri Lanka", in F. Von Benda-Beekmann and M. van der Velde ed., *Law as a Resource in Agrarian Struggles*, Agricultural University, Wageningen.

Yoder, Robert and J. Thurston ed. (1989). *Design Issues in Farmer-Managed Irrigation System*, IIMI, Sri Lanka.