



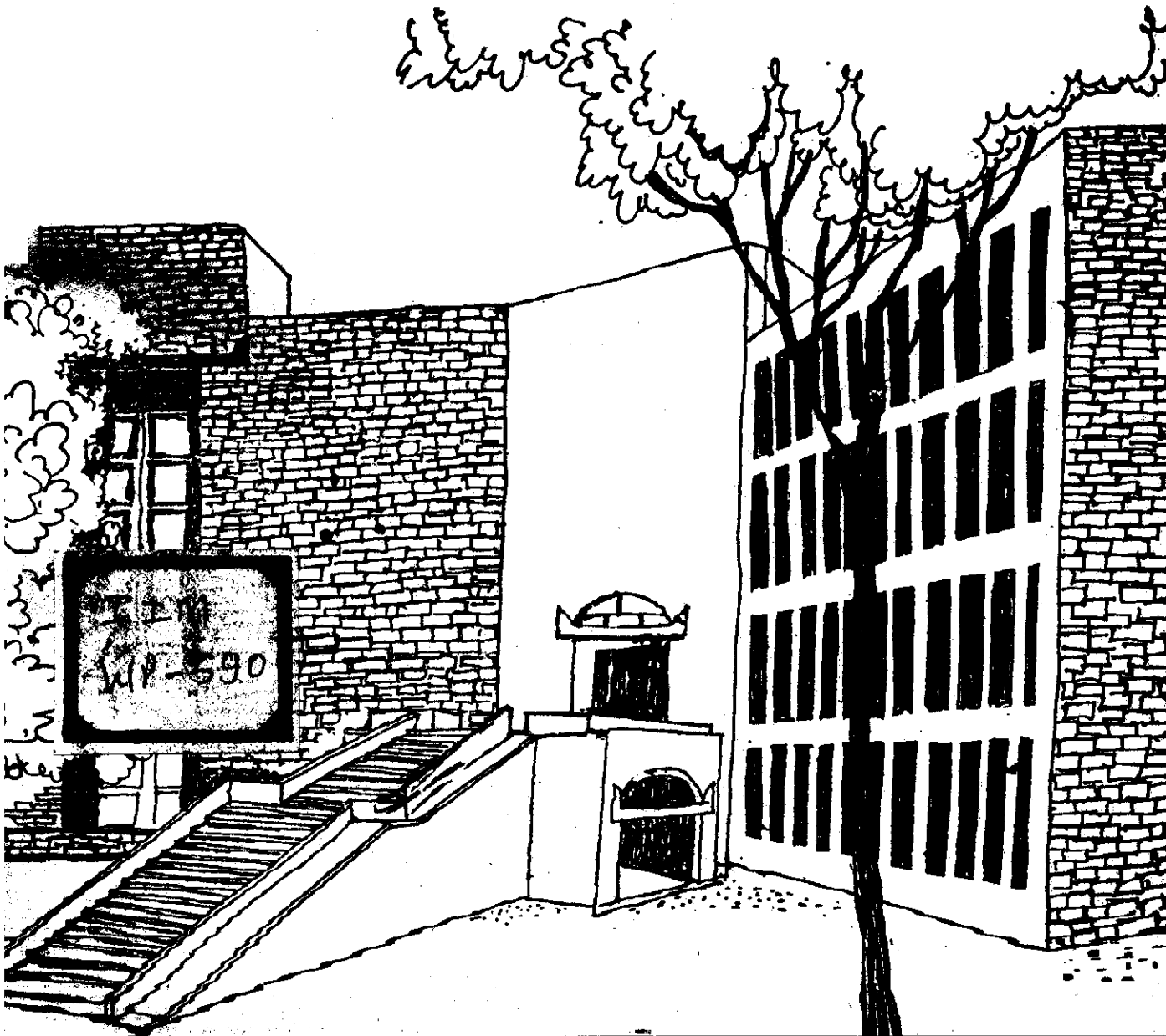
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PEOPLES' PARTICIPATION IN IRRIGATION PROJECTS:
CHANGING PATTERNS OF HIMACHAL PRADESH IN INDIA

By

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PEOPLES' PARTICIPATION IN IRRIGATION PROJECTS: CHANGING

PATTERNS OF HIMACHAL PRADESH IN INDIA*

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ABSTRACT

Title : Peoples' Participation in Irrigation Projects:
Changing Patterns of Himachal Pradesh in India

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The concept of peoples' participation in national economic development has gained renewed significance in recent years. This paper, using a case method of analysis, studies the changing patterns of peoples' participation in irrigation projects of the Himalayan ranges in India and identifies factors which promote or retard participatory behaviour. Three case studies include (1) a century-old community irrigation system showing signs of impending breakdown; (2) a locally managed irrigation system which was handed over to the government for its maintenance and operation; and (3) an irrigation system sponsored by the government to encourage collective ownership and local participation. Though limited in scope, these case studies indicate that medium or long term participation depends on (a) the degree of dependence on the gains from the activity in which participation is required; (b) the degree of dependence on the group effort to achieve those gains; (c) the degree of certainty that the gains would be achieved; (d) the degree of certainty that the common resources would be managed properly; (e) the degree of certainty that the gains would be distributed equitably; (f) the degree of perceived or likely presence of the exploitative element; and (g) the degree of certainty that returns would be commensurate with risk and investment, i.e. the opportunity cost of time and efforts.

Conceptual Framework

Participation of people in national economic development is not a new idea and many developing countries, soon after attaining independence, initiated programmes requiring such participation. However, such participation was characterized either by participation in the political process or by way of people making increased use of infrastructural and public service facilities. The idea that people should participate in their own development has gained renewed significance recently partly because of the insistence of national policy makers and international funding agencies and partly because earlier experience with cooperatives and community development programmes produced disappointing results. Various attempts have been made since then to (a) understand the concept of peoples' participation, (b) identify factors that affect the level of participation, and (c) suggest ways to encourage participatory models of development.

Participation has been defined as associating oneself, individually or as a member of a group, with a legitimate task, be it a programme, scheme, project, activity or a movement, with an appreciable degree of either adaptive, emotional, expressive, or instrumental involvement inclusive of both its positive and negative connotations (Shingi, Patel and Wadwalkar, 1985).¹

¹Shingi, et. al. (1985) have also identified four types of participation. Process participation involves participating in processes which lead to better decision making. Cognitive participation means identifying oneself with the concept, idea, or task but not necessarily participating in it physically. Interactive participation connotes contributions by way of educating, motivating, and preparing people for a particular task. Material participation includes individual contributions by way of time, money, labour and other resources necessary to achieve stated goals.

Participation is advocated on the ground that it recognizes people as human beings, brings dignity to their work, taps their creative imaginations, improves their learning and decision making, creates in them a sense of collective and personal responsibility, utilizes local resources and skills, and builds local leadership (Patil, 1982).

A number of probable factors which to some extent affect peoples' participation have been enumerated. It has been observed that participation is contingent upon (a) the scope of participation permitted by programme officials; (b) existing patterns of community and bureaucratic decision making; (c) homogeneity of the participating community; (d) volume and magnitude of responsibility assigned; (e) material and technical support available from outside; (f) community threshold of economic development; (g) administrative and managerial capabilities; (h) quantum of expected benefits; (i) availability of professional advice; and (j) the nature of activity (see Taylor and Moore, 1980; Brinkerhoff, 1979; Harbeson, 1980; Hyden, 1980).

It has also been pointed out that participatory programmes are likely to be successful if the objectives of these programmes are modest, if the focus is on small groups, if the project utilizes indigenous traditions of mutual assistance, if practical and on-going negotiations are required, if the project meets felt needs, if appropriate technology is promoted, if income producing activities are chosen, and if sufficient control over the resources

are given to people (Duncan 1979, Huntington 1980, Goldsmith 1982, Hondale 1982).

All these, however, are broad observations and look at participation from the point of view of project bureaucracy. This paper analyses participation from the viewpoint of project beneficiaries and is exploratory in nature.

Methodology and Location of Case Studies

The case method of analysis is used to study the changing patterns of peoples' participation in irrigation projects and to identify factors which promote or retard participatory behaviour. The three case studies which have been compared in this paper include (1) a century-old community-managed irrigation system showing signs of impending breakdown; (2) a locally managed irrigation system which was handed over to the state government for maintenance and operation; and (3) an irrigation system sponsored by the state government to encourage collective ownership and local participation. All these cases are from a small-sized, hilly state of Himachal Pradesh located in the north-western Himalayan ranges of India. The state is predominantly rural in character as close to ninety per cent of its population lives in villages and largely depends on agriculture, horticulture and animal husbandry for its livelihood. The entire region is divided into valleys, low hills, high hills, Alpine zones and snow deserts.

Case I : Mumta Community Kuhl

Mumta is a small, isolated village having 100 acres of agricultural land. Maize, paddy and fodder are the three important crops of the village. About 47 acres belonging to 25 farmers are served by a century-old community kuhl (a local irrigation system) managed and operated by a Kohli (water-tender) on behalf of the water users. The original Kohli was identified by the members of the kuhl. The Kohli's post is hereditary and the present Kohli will soon hand over his functions to his nephew after his retirement since he does not have any sons.

Himachal Pradesh is a mountainous area with snow-fed or rain-fed water flowing through the nallahs (rapids) almost throughout the year. The community kuhl normally involves construction of a temporary headwall on the nallah to divert water through the unlined canal (kuhl) to the fields. Water then continuously flows from one field to another as these fields are terraced and sloped, and is finally drained into a nallah down-stream. At the end of the season, when water is no longer required for the standing crops, the temporary construction is demolished. The structure is constructed again during the next cropping season.

The Kohli plays an important role in the construction, operation and maintenance of the kuhl. At the beginning of the season, he will consult a number of people and on a specified day call all the irrigators of the kuhl to assemble to construct the headwall made of river boulders. The construction in Mumta involves around 144

mandays of work. The length of canal is about 3 kilometer from the headwall to the first field. The basic requirements are labour and boulders from the nallah. The Kohli himself is a kind of a local engineer. He directs irrigators to pick up boulders and place them in a particular format. Everybody works till the headwall and the repair of the unlined canal is completed. A person remaining absent without valid reasons like illness or prior permission of the Kohli is denied water for that season even though it is costly to bypass a person having fields in the middle of the flow. Since loss of crop means a great deal of hardship, denial of water is regarded as a severe punishment. A person has freedom to provide a substitute for his labour.

The Kohli also maintains the main canal and the field channels with the help of irrigators. During days of scarcity, he decides the quantity of water to be allocated to each irrigator. This is normally done on the basis of size of landholding. He uses native methods of measuring water discharge. The flow of water is controlled by the width of the opening of the outlet from one field to another. If there are any conflicts or disputes regarding use of water during scarcity days, they are normally referred to the Kohli. He with the help of the co-opted members looks into the complaint and makes decisions on the spot. People have faith in him. But if he happens to be one of the parties involved in the conflict, the matter is normally referred to the panchayat (village council); and if found guilty, he himself is meted out with punishment. Normally, the Kohli

himself apologises for occasionally getting furious at someone. The most effective deterrent for the Kohli to get involved in malpractices is the fear that the irrigators might beat him up. For many decades now, the people have given him the authority and have respected his judgements. For all these services, the Kohli is paid in kind. At the time of harvest, he is given grains equal to the weight of seeds sown. The Kohli himself is one of the irrigators and has a piece of land. It is hardly conceivable that an irrigator would disobey the legitimate tasks assigned to him by the Kohli.

Changes, however, have been taking place in the village. Outside employment opportunities on road construction etc. are increasing. Most of the old generation of farmers have handed over their lands to the younger generation. These new farmers, regarded by the Kohli as "gentleman" farmers, place a low value on labour, and are willing to pay the fine, or labour charges, in lieu of the work they are supposed to do on the community kuhl. A committee consisting of four nominated members and the Kohli himself was, therefore, set up in recent years to work out the mechanisms to cope with the emerging trends. A fine of Rs. 8 per day was fixed for a person not participating in the construction work. In the first year an amount of Rs. 200 was collected by way of fine which was used to hire labourers for this work. This system is also changing, and now a fixed amount of Rs. 15 per acre is collected from each individual irrigator. Any person willing to work on the construction is then

paid daily wages at the rate of Rs. 5 out of the fixed contributions. The Kohli still continues to collect labourers and supervise the construction work. He now feels that the government should give some help to maintain the community kuhl. However, no one, including the Kohli, wants the government to take over the kuhl, because then they would have to pay water charges to the government. The water charges are very nominal, but according to the Kohli, the nuisance value of making the payment is much more than the amount itself.

Case II : Samloti Community Kuhl

Samloti is a neighbouring village. It has three community kuhls of different sizes. A group of farmers of this village used to get water from a community kuhl constructed long ago by a king on the nallah into which the water of the kuhl of Mumta village drains. The discharge from their nallah was inadequate and their kuhl used to stop flowing in the summer, unless the water draining from the Mumta kuhl replenished it to some extent. This village had followed similar practices of managing their kuhls which irrigated about 20 acres of paddy fields belonging to 23 farmers. It had a symbiotic relationship with Mumta village in the sense that their agriculture partly depended on the management of the kuhl in Mumta village. Since the work involved at the headwall of the Mumta kuhl was large, the irrigators of Samloti village used to go there at the time of the construction. The Kohlis of both villages would work out a joint strategy to get the work done.

The Kohli of Samloti village would then initiate work on its own headwall to make the irrigation system functional. Any person not getting his due share could approach the Kohli to seek justice.

To promote democratic decentralization, panchayati raj was introduced in the fifties throughout the state, and a three-tier structure of rural, local government at the village, block and district levels was created to plan and implement community development programmes through the council of the locally elected representatives of the people. Panchayats (village councils) were given necessary powers and resources to execute government approved development schemes. Under some of these schemes, provision was made to give ad-hoc grants to panchayats for repair and maintenance of community kuhls. The block development office sanctioned these grants on requests from the panchayats. It was expected that the panchayats would also contribute by way of labour in some proportion.

Being politically very active, the local leaders of Samloti had good contacts at the block office. Samloti Panchayat favoured making use of grants for repairs. The Kohli was asked to call meetings to explain the estimates of expenditures, funds available, and the labour contribution by the members. Ad-hoc grants were sanctioned, but over a period of time the contribution of the people, in terms of labour, kept on declining. Some of the farmers irrigating lands from this kuhl also had lands in other kuhls. They preferred

uniform and centralized system. The functions relating to the construction work slowly shifted from the kohli to the panchayats. A water committee was set up for this purpose. The panchayat, being a body of the peoples' representatives, however, could not exercise the same authority as the kohli, and could not meet the labour requirements. The cost of repairs, such as cement, etc., also increased in price and the grants given were not adequate to cover the expenses. As a result, the kuhl could not be operated effectively and became defunct. A large number of irrigators could grow only fodder in the absence of sufficient water.

The department of irrigation had various schemes to repair and modernize the defunct kuhls. The officials believed that funds should be invested in problem kuhls which people had used for decades and which needed to be revived. In the absence of such an investment, they feared that agricultural production from otherwise fertile lands would go down.

In case of Samloti, it was pointed out that it was possible to divert water by gravity from another nallah through R C C pipes and then allow it to fall into the village nallah to permanently solve the problem of inadequate discharge during summers. The estimated cost of the project was Rs. 0.23 million; and, it was to irrigate 80 acres belonging to 155 farmers. The scheme involved construction of a head wier, the intake chamber, the gravity main, the main kuhl, the syphon crossing, and the lining of the kuhl.

On the advice of some elders, the panchayat approached the department of irrigation for help. The department, according to its norms, asked the panchayat to pass a resolution to hand over the defunct kuhl to the department for its repair and subsequent maintenance. A Beldar, (a village level functionary of the department), would be appointed to regulate water supply and water charges would be recovered from the farmers. He would solve individual conflicts with the help of panchayat members. Water rates were supposed to be determined by keeping due regard to the maintenance and operation charges for the system and the cost of collection of water charges. A special rate was to be imposed for non-authorized use of water. The panchayat, therefore, took a decision to hand over the kuhl to the department.

Being a big scheme, it took five years for the Department to obtain administrative, technical, and financial sanctions and complete the scheme. In the meantime, the irrigators gradually stopped making payments for the services of the Kohli, since most of his functions were taken over first by the panchayats, and later by the government. The old Kohli is now retired and lives an isolated life. At the same time, people of Samloti also refused to participate in the construction of the headwall of Mumta community kuhl, because they felt that their kuhl was already transferred to the government, and therefore it was not necessary for them to participate.

The Mumta farmers, according to one version, now delay the construction of the headwall by 15 days to punish the Samloti farmers for non-participation. In this way, water reaches the Samloti kuhl only when the sowing or transplanting season is almost over. According to another version, the work involved is so huge that in the absence of any help from Samloti village, it takes longer to finish the work. And therefore, there is an unintentional delay in supplying water to Samloti. Since Mumta farmers have not taken help from the government so far, conflicts of this nature cannot be resolved by the department.

Case III : Soyara Lift Irrigation Scheme

Soyara village has a population of 425, and most farmers grow rain-fed maize, since their lands are situated at a higher level in a valley in the Himalayas. Under the government programme of soil and moisture conservation, the department of agriculture had introduced a scheme of giving 50 per cent subsidy and 50 per cent loan to farmers interested in collectively owning an irrigation system. As a result of political persuasions and bureaucratic negotiations, a group of 16 farmers from this village submitted an application for a lift irrigation scheme. Unlike those of the department of irrigation, the officials of the department of agriculture believed that the small schemes had definite advantages like self regulation, less conflicts, local control over resources, better maintenance, more water utilization and continuous participation

of people. In large schemes, on the other hand, the rate of failure was high because of political interference, bureaucratic procedures, a heterogeneous user group, problematic cooperation, poor recovery of loans, a large number of conflicts, and neglect of the maintenance function.

The proposal was to lift water from a perennial nallah flowing nearby by constructing a pump house and installing a 15 HP motor at an average cost of Rs. 1250 per acre, and then distributing water through open channels to the members.

According to the procedures, the certificates to use water were obtained by agreeing that (a) available water was not used by anyone to preserve water rights, and (b) the annual income of a member from all sources was less than Rs. 6000 (\$500) to ensure benefits to small farmers. The farmers also signed an agreement to (a) pay the expenses incurred by the state government on the scheme, (b) maintain the water source at their own cost after the scheme became operational, (c) get an electricity connection by their efforts and costs, and (d) get the scheme executed through the office of soil conservation. Upon receipt of the application, the sub-inspector of the department collected relevant information, prepared estimates of costs, and completed all formalities before submitting the proposal to the soil conservation officer for his technical scrutiny, who, in turn, submitted it to the district land development committee for its administrative approval. Subsequently financial sanction was

obtained and construction work began. All the 16 farmers planned to grow paddy on a total command area of 23 acres in addition to maize which they were already growing.

It was agreed at the time of negotiations that the farmers would manage their own system by identifying a person among them who would look after the installation and operate the pump.

Accordingly, a person, who was also performing religious functions for the village, was identified as the Kohli (regarded as pump operator). Depending on the area irrigated, everybody agreed to give a fixed quantity of foodgrains to the operator for his services.

The system has been working well since 1974. Whenever a member requires water he goes to the pump house and registers his demand for water. The pump operator then starts the pump by noting down the meter readings in the presence of the irrigator and stops it whenever the irrigator informs him to do so. The units consumed are written down in a diary and the electricity charges are settled every month. Water is given on first-come-first-serve basis. In case conflicts or misunderstanding arise, the pump is stopped immediately to avoid the question as to whose account the electricity charges be debited. The supply is restored when the conflict is resolved.

Small repair works are carried out by the operator. For major repairs, he seeks the help of other members or uses services in nearby towns. The expenses are then shared equally.

The area under irrigation is reduced whenever there is a shortage of water, and the operator, in consultation with others, decides how much area would be irrigated. Under these circumstances, everybody places an equal area under irrigation. Priority can be given occasionally to a particular person depending upon his need of water for survival.

Memberships are not transferable, and no one is allowed to sell water to non-members. This is because a non-member may get benefits but may not share losses.

The scheme has been successful, partly because the operator has been honest, unbiased, vocal, and very strict in his dealings. He does not have any technical background. Socially, he is also a powerful person because of his contributions to the religious activities. The operator, however, has not been very happy with the amount of compensation. The members on the other hand feel that, though competent, the operator is greedy.

Analysis of Cases

All the three project sites had a similar stock of local traditions; yet, they showed variations in patterns of participation. The question is: Why does participation work in one case while it does not in another?

The first case indicates that people want to hold on to their own, nearly fullproof, well developed, century old system of irrigation, but are finding it difficult to do so. The community

kuhl served an immediate economic need when no outside source of assistance, financial or technical, was available. Isolated communities are known to evolve ways of cooperation in order to benefit from nature. Dependence on agriculture at that time was high and therefore dependence on water was strong. Developing individual systems of irrigation was not feasible; and therefore dependence on group and group processes was strong. Viewed from today's standards, the technology of tapping water was simple, and the major input required was labour. Organization of the task required assignment of specific responsibilities to a competent person, development of norms of internal discipline, and reward systems. All these attributes provided a base for collective action.

Changes are, however, taking place in the environment. National independence and development programmes have created new economic opportunities and the village did not remain outside these influences. New opportunities changed the opportunity cost of labour. The younger generation is more willing to participate by way of money than labour. If we use the Shingi, et. al. (1985) classification of participation, both are forms of material participation, but substitution of money for labour opens up new alternatives of seeking financial help from outside sources.

Added to the factor of the opportunity cost of labour is the increased burden of providing more labour for the same returns, because the Sanloti farmers withdrew their help. It proved that the earlier inter-dependence relationship was fast becoming asymmetrical. Dependence of the Munta farmers on the Sanloti labour was much more than the dependence of Sanloti farmers on Munta water. What the Sanloti farmer refused to provide (labour), the government was in principle willing to give in the form of money. This meant accepting a new dependency relationship and the loss of process and interactive participation. The latter never was an economic necessity. It was only a necessary condition to exploit a technological feasibility. So it could be sacrificed. But more importantly, it also meant a loss of control over the resources and new economic relationships with the government in the form of paying water charges.

The choices before the community are: (a) to lose control over resources to maintain economic gains; or (b) to lose economic gains to maintain control over resources. The first choice would be exercised if there is a certainty that goods would be delivered; otherwise the economic gains themselves would be in danger. The second choice would be exercised if dependence on agriculture for which the resource is utilized itself is declining. The third choice, of course, is to maintain the status-quo. The participatory system is showing signs of impending breakdown as inclination to approach the government is gaining ground.

Though the original participatory arrangement served their economic interest, the Samloti farmers in the second case willingly accepted a decision to surrender ownership of resources to the government. This was because the new dependence relationship promised to serve their economic interests better. In fact what is surrendered is not as much ownership of resource as (a) the right of decision-making; (b) internal discipline; and (c) the control over the processes of construction of headwall, distribution of water and settlement of disputes. It is the self-management of resource which is being surrendered to increase the availability of water. Certainty of accrual of benefits is more important than the socio-organizational forms through which such benefits could be guaranteed. People are willing to adopt participatory or non-participatory forms of social organization if they served their economic needs. The relevant question is: whether given a situation wherein both participatory and non-participatory forms of social organizations can guarantee accrual of benefits, would people prefer the participatory form of social organization or not? It probably will depend on the social and economic costs associated with each alternative. Any form which increases their capacity to be independent at low cost probably would be chosen.

In the case of Mumta village, the question was not how much would they gain by transferring the resource, but how much would they lose. In the Samloti case, on the other hand, the question was not how

much would they lose, but how much would they gain. Technological innovations opened up possibilities of inter-basin transfer of water. External inputs in the form of technology, finance, and trained manpower were available. Elected leaders and government employees had desires to do something for people from whom they derived their existence and strengths. Temptation to use the existing infrastructure was powerful in the face of the fact that the complexity of technology and the magnitude of investment were increasing. It cannot be said that the government agency was merely replacing the functions of the Kohli. What was offered in addition to augmented supply of water was the reduction in the recurring cost of construction through a permanent structure which increased the degree of certainty with respect to the accrual of gains.

In the third case the initiative has come from the government to encourage local participation. The role of political leaders in getting such scheme initiated is quite visible. This is in sharp contrast to internally sponsored participation. The scheme was accepted by the people because it promised (a) economic gains; (b) ownership of and control over assets; (c) reasonable coverage of risk of failure through a component of subsidy; (d) equitable distribution of costs and responsibilities; (e) reduced chances of conflicts because of its size; and (f) reduced chances of dominance by vested interests because of the homogeneity of the group on the basis of its limited annual income. Besides, the dependence

on the outside agency to operate the technology was not high. Technology was capital intensive and therefore joint ownership was needed. This case indicates that people are receptive to new ideas, new technology, and new forms of social organization. Normally one would have expected a government sponsored or externally motivated routine development scheme to be a failure. But in this case, the group has not disintegrated; probably the pump operator has been playing the role of an informal leader. The Kohli of the community kuhl in one sense cannot be regarded as an informal leader. It is because the degree of his intervention required in the task around which the group is built is not as high as that of the pump operator. The risk involved as a result of damage to the machinery is higher than the damage to the temporary headwall. Therefore, the pump operator has to exercise more control. He is performing a managerial role and therefore leadership is required. The member-member relationship is not as strong as the member-pump-operator relationship. In that sense it is not a collaborative effort as is the case with the community kuhl where everybody has to come together. The Kohli is more of an organizer and less of a manager. The pump operator was not only able to provide stable leadership but could assure equity and justice. His technical skills were secondary to these characteristics.

There are definite advantages of the scheme being small and serving the immediate need of farmers. But these advantages would have been of little value if the benefits were not distributed equitably. In other words, absence of the exploitative element in the scheme also contributed to its success. Availability of appropriate knowledge, technology, and assets is a necessary but not a sufficient condition for participation.

Admittedly, these case studies provide a limited scope for generalizations and meaningful interpretations. However, they do suggest the significance of some of the factors which have a bearing on peoples' participation. The analysis indicates that medium or long term participation depends on (a) the degree of dependence on the gains from the activity in which participation is required; (b) the degree of dependence on the group effort to achieve those gains; (c) the degree of certainty that the common resources would be managed properly; (d) the degree of certainty that the gains would be distributed equitably; (e) the degree of perceived or likely presence of the exploitative element; and (f) the degree of certainty that returns would be commensurate with risk and investment, i.e. the opportunity cost of time and efforts.

Concluding Remarks

Several changes have taken place during the last one hundred years in Himachal Pradesh in terms of scientific knowledge, technology, funding patterns, political forms, and value systems. These changes have influenced participatory forms of social-organization. All the attributes or conditions which triggered peoples' participation previously may not be valid in changing conditions. And, one probably needs to look for new attributes. It needs to be appreciated that peoples' participation is only subservient to their economic needs. Participation is a goal for the government and the funding agencies, and not for the people; for them it is only one of the mechanisms to achieve their goals. Future research should also address a question whether the participation is a cultural variable and a regional characteristic.

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